



**NASA SP-7039(22)**

**Section 2**

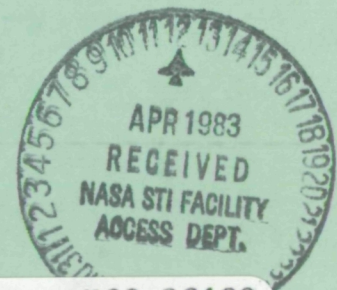
**Indexes**

# **NASA PATENT ABSTRACTS BIBLIOGRAPHY**

**A CONTINUING BIBLIOGRAPHY**

**Section 2 • Indexes**

**JANUARY 1983**



(NASA-SP-7039 (22)-Sect-2) NASA PATENT ABSTRACTS BIBLIOGRAPHY. A CONTINUING BIBLIOGRAPHY (SUPPLEMENT 22). SECTION 2: INDEXES (National Aeronautics and Space Administration) 364 p HC \$20.00 CSCI 05B 00/82 09558 N83-23199 Unclas

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**



## ACCESSION NUMBER RANGES

<i>Bibliography Number</i>	<i>STAR Accession Numbers</i>
NASA SP-7039(04)	N69-20701 – N73-33931
NASA SP-7039(12)	N74-10001 – N77-34042
NASA SP-7039(13)	N78-10001 – N78-22018
NASA SP-7039(14)	N78-22019 – N78-34034
NASA SP-7039(15)	N79-10001 – N79-21993
NASA SP-7039(16)	N79-21994 – N79-34158
NASA SP-7039(17)	N80-10001 – N80-22254
NASA SP-7039(18)	N80-22255 – N80-34339
NASA SP-7039(19)	N81-10001 – N81-21997
NASA SP-7039(20)	N81-21998 – N81-34139
NASA SP-7039(21)	N82-10001 – N82-22140
NASA SP-7039(22)	N82-22141 – N82-34341

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**NASA**

**PATENT  
ABSTRACTS  
BIBLIOGRAPHY**

**A CONTINUING BIBLIOGRAPHY**

**Section 2 • Indexes**

Indexes for the annotated references to NASA-owned inventions covered by U.S. patents and applications for patent that were announced in *Scientific and Technical Aerospace Reports (STAR)* between May 1969 and December 1982. This issue supersedes all previous Index Sections.



This supplement is available as NTISUB/111/093 from the National Technical Information Service (NTIS), Springfield, Virginia 22161 at the price of \$20.00 domestic; \$40.00 foreign for standing orders. Please note: Standing orders are subscriptions which do not terminate at the end of a year, as do regular subscriptions, but continue indefinitely unless specifically terminated by the subscriber.



# INTRODUCTION

Several thousand inventions result each year from the aeronautical and space research supported by the National Aeronautics and Space Administration. The inventions having important use in government programs or significant commercial potential are usually patented by NASA. These inventions cover practically all fields of technology and include many that have useful and valuable commercial application.

NASA inventions best serve the interests of the United States when their benefits are available to the public. In many instances, the granting of nonexclusive or exclusive licenses for the practice of these inventions may assist in the accomplishment of this objective. This bibliography is published as a service to companies, firms, and individuals seeking new, licensable products for the commercial market.

The *NASA Patent Abstracts Bibliography (NASA PAB)* is a semiannual NASA publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. The citations included in *NASA PAB* were originally published in NASA's *Scientific and Technical Aerospace Reports (STAR)* and cover *STAR* announcements made since May 1969.

For the convenience of the user, each issue of *NASA PAB* has a separately bound Abstract Section (Section 1) and Index Section (Section 2). Although each Abstract Section covers only the indicated six-month period, the Index Section is cumulative covering all NASA-owned inventions announced in *STAR* since 1969. Thus a complete set of *NASA PAB* would consist of the Abstract Sections of Issue 04 (January 1974) and Issue 12 (January 1978) and the Abstract Section for all subsequent issues and the Index Section for the most recent issue.

The 234 citations published in this issue of the Abstract Section cover the period July 1982 through December 1982. The Index Section references over 4000 citations covering the period May 1969 through December 1982.

## ABSTRACT SECTION (SECTION 1)

This *PAB* issue incorporates the 1975 *STAR* category revisions which include 10 major subdivisions divided into 74 specific categories and one general category/division. (See Table of Contents for the scope note of each category under which are grouped appropriate NASA inventions.) This new scheme was devised in lieu of the 34 category divisions which were utilized in *PAB* supplements (01) through (06) covering *STAR* abstracts from May 1969 through January 1974. Each entry in the Abstract Section consists of a *STAR* citation accompanied by an abstract and a key illustration taken from the patent or application for patent drawing. Entries are arranged in subject category in order of the ascending NASA Accession Number originally assigned in *STAR* to the invention. The range of NASA Accession Numbers within each issue is printed on the inside front cover.

*Abstract Citation Data Elements.* Each of the abstract citations has several data elements useful for identification and indexing purposes, as follows:

- NASA Accession Number
- NASA Case Number
- Inventor's Name
- Title of Invention
- U.S. Patent Application Serial Number
- U.S. Patent Number (for issued patents only)
- U.S. Patent Office Classification Number(s)  
(for issued patents only)

These data elements in the citation of the abstract are depicted in the Typical Citation and Abstract reproduced on the following page and are also used in the indexes.



# TYPICAL CITATION AND ABSTRACT

**NASA SPONSORED DOCUMENT** → **AVAILABLE ON MICROFICHE**

**NASA ACCESSION NUMBER** → **N82-18203\*** National Aeronautics and Space Administration  
Langley Research Center, Hampton, Va → **SOURCE**

**TITLE** → **SLOTTED VARIABLE CAMBER FLAP Patent Application**  
Dana G Andrews, inventor (to NASA) (Boeing Commercial Airplane Co., Seattle) Filed 30 Oct 1981 13 p Sponsored by NASA → **US PATENT APPLICATIONS SERIAL NUMBER**

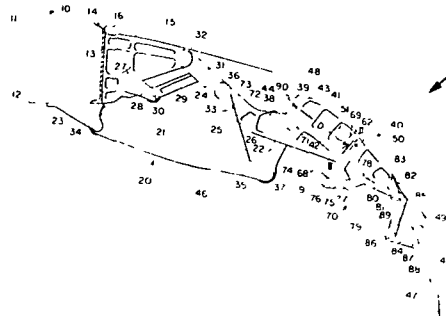
**INVENTOR** → (NASA-Case-LAR-12541-1, US-Patent-Appl-SN-315588) Avail → **AVAILABILITY**

**NASA CASE NUMBER** → NTIS HC A02/MF A01 CSCL 01C → **COSATI CODE**

**ABSTRACT** →

Variable camber actuator assemblies broaden the range of speeds at which lift to drag performance is maximized for slotted flap wings. Lift is improved by varying wing camber with rotational flap movements that do not introduce wing slots and induced drag. Forward flaps are secured to forward flange links which extend from, and are a part of, forward flap linkage assemblies. The forward flaps rotate about flap pivots with their rotational displacement controlled by variable camber actuator assemblies located between the forward flaps and the forward flange links. Rear flaps are held relative to the forward flaps by rear flap linkage assemblies which may act independently from the forward flap linkage assemblies and the variable camber actuator assemblies. Wing camber is varied by rotating the flaps with the variable camber actuator assemblies while the flaps are in a deployed or tucked position. Rotating flaps in a tucked position does not introduce significant wing surface discontinuities, and reduces aircraft fuel consumption on most flight profiles. NASA

**KEY ILLUSTRATION**





## INDEX SECTION (SECTION 2)

The Index Section is divided into five indexes which are cross-indexed and are useful in locating a single invention or groups of inventions.

Each of the five indexes utilizes basic data elements: (1) Subject Category Number, (2) NASA Accession Number, and (3) NASA Case Number, in addition to other specific index terms.

**Subject Index:** Lists all inventions according to appropriate alphabetized technical term and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Inventor Index:** Lists all inventions according to alphabetized names of inventors and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Source Index:** Lists all inventions according to alphabetized source of invention (i.e., name of contractor or government installation where invention was made) and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Number Index:** Lists inventions in order of ascending (1) NASA Case Number, (2) U.S. Patent Application Serial Number, (3) U.S. Patent Classification Number, and (4) U.S. Patent Number and indicates the related Subject Category Number and the NASA Accession Number.

**Accession Number Index:** Lists all inventions in order of ascending NASA Accession Number and indicates the related Subject Category Number, the NASA Case Number, the U.S. Patent Application Serial Number, the U.S. Patent Classification Number, and the U.S. Patent Number.

## HOW TO USE THIS PUBLICATION TO IDENTIFY NASA INVENTIONS

To identify one or more NASA inventions within a specific technical field or subject, several techniques are possible when using the flexibility incorporated into the *NASA PAB*.

(1) *Using Subject Category:* To identify all NASA inventions in any one of the subject categories in this issue of *NASA PAB*, select the desired Subject Category in the Abstract Section (Section 1) and find the inventions abstracted thereunder.

(2) *Using Subject Index:* To identify all NASA inventions listed under a desired technical subject index term, (A) turn to the cumulative Subject Index in the Index Section and find the invention(s) listed under the desired technical subject term (B) Note the indicated Accession Number and the Subject Category Number (C) Using the indicated Accession Number, turn to the inside front cover of the Index Section to determine which issue of the Abstract Section includes the Accession Number desired (D) To find the abstract of the particular invention in the issue of the Abstract Section selected, (i) use the Subject Category Number to locate the Subject Category and (ii) use the Accession Number to locate the desired invention within the Subject Category listing.

(3) *Using Patent Classification Index:* To identify all inventions covered by issued NASA patents (does not include applications for patent) within a desired Patent Classification, (A) turn to the Patent Classification Number in the Number Index of Section 2 and find the associated invention(s), and (B) follow the instructions outlined in (2)(B), and (D) above.



## **PUBLIC AVAILABILITY OF COPIES OF PATENTS AND PATENT APPLICATIONS**

Copies of U.S. patents may be purchased directly from the U.S. Patent and Trademark Office, Washington, D C 20231, for fifty cents a copy. When ordering patents, the U S Patent Number should be used, and payment must be remitted in advance, preferably by money order or check payable to the Commissioner of Patents and Trademarks. Prepaid purchase coupons for ordering are also available from the Patent and Trademark Office.

*NASA patent application specifications* are sold in paper copy by the National Technical Information Service at price code A02 (\$7.00 domestic; \$14.00 foreign). Microfiche are sold at price code A01 (\$4.50 domestic; \$9.00 foreign). The US-Patent-Appl-SN-number should be used in ordering either paper copy or microfiche from NTIS.

## **LICENSES FOR COMMERCIAL USE: INQUIRIES AND APPLICATIONS FOR LICENSE**

NASA inventions, abstracted in *NASA PAB*, are available for nonexclusive or exclusive licensing in accordance with the NASA Patent Licensing Regulations. It is significant that all licenses for NASA inventions shall be by express written instruments and that no license will be granted or implied in a NASA invention except as provided in the NASA Patent Licensing Regulations.

Inquiries concerning the NASA Patent Licensing Program or the availability of licenses for the commercial use of NASA-owned inventions covered by U.S. patents or pending applications for patent should be forwarded to the NASA Patent Counsel of the NASA installation having cognizance of the specific invention, or the Assistant General Counsel for Patent Matters, Code GP-4, National Aeronautics and Space Administration, Washington, D C. 20546. Inquiries should refer to the NASA Case Number, the Title of the Invention, and the U.S. Patent Number or the U.S. Application Serial Number assigned to the invention as shown in *NASA PAB*.

The NASA Patent Counsel having cognizance of the invention is determined by the first three letters or prefix of the NASA Case Number assigned to the invention. The addresses of NASA Patent Counsels are listed alongside the NASA Case Number prefix letters in the following table. Formal application of license must be submitted on the NASA Form, Application for NASA Patent License, which is available upon request from any NASA Patent Counsel.



**NASA Case  
Number  
Prefix Letters**

**Address of Cognizant  
NASA Patent Counsel**

ARC-xxxxx  
XAR-xxxxx

Ames Research Center  
Mail Code: 200-11A  
Moffett Field, California 94035  
Telephone: (415)965-5104

ERC-xxxxx  
XER-xxxxx  
HQN-xxxxx  
XHQ-xxxxx

NASA Headquarters  
Mail Code GP-4  
Washington, D C 20546  
Telephone: (202)755-3954

GSC-xxxxx  
XGS-xxxxx

Goddard Space Flight Center  
Mail Code: 204  
Greenbelt, Maryland 20771  
Telephone: (301)344-7351

KSC-xxxxx  
XKS-xxxxx

John F Kennedy Space Center  
Mail Code: PT-PAT  
Kennedy Space Center, Florida 32899  
Telephone (305)867-2544

LAR-xxxxx  
XLA-xxxxx

Langley Research Center  
Mail Code: 279  
Hampton, Virginia 23365  
Telephone: (804)827-8725

LEW-xxxxx  
XLE-xxxxx

Lewis Research Center  
Mail Code: 500-318  
21000 Brookpark Road  
Cleveland, Ohio 44135  
Telephone: (216)433-6346

MSC-xxxxx  
XMS-xxxxx

Lyndon B Johnson Space Center  
Mail Code: AL3  
Houston, Texas 77058  
Telephone: (713)483-4871

MFS-xxxxx  
XMF-xxxxx

George C Marshall Space Flight Center  
Mail Code: CC01  
Huntsville, Alabama 35812  
Telephone: (205)453-0020

NPO-xxxxx  
XNP-xxxxx  
FRC-xxxxx  
XFR-xxxxx  
WOO-xxxxx

NASA Resident Legal Office  
Mail Code: 180-801  
4800 Oak Grove Drive  
Pasadena, California 91103  
Telephone: (213)354-2700



# PATENT LICENSING REGULATIONS

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

### 14 CFR Part 1245

#### Licensing of NASA Inventions

**AGENCY:** National Aeronautics and Space Administration.

**ACTION:** Interim regulation with comments requested.

**SUMMARY:** The National Aeronautics and Space Administration (NASA) is revising its patent licensing regulations to conform with Pub. L. 96-517. This interim regulation provides policies and procedures applicable to the licensing of federally owned inventions in the custody of the National Aeronautics and Space Administration, and implements Pub. L. 96-517. The object of this subpart is to use the patent system to promote the utilization of inventions arising from NASA supported research and development.

**EFFECTIVE DATE:** July 1, 1981. Comments must be received in writing by December 2, 1981. Unless a notice is published in the *Federal Register* after the comment period indicating changes to be made, this interim regulation shall become a final regulation.

**ADDRESS:** Mr. John G. Mannix, Director of Patent Licensing, GP-4, NASA, Washington, D.C. 20546.

**FOR FURTHER INFORMATION CONTACT:** Mr. John G. Mannix, (202) 755-3954

#### SUPPLEMENTARY INFORMATION:

### PART 1245—PATENTS AND OTHER INTELLECTUAL PROPERTY RIGHTS

Subpart 2 of Part 1245 is revised to read as follows

#### Subpart 2—Licensing of NASA Inventions

##### Sec.

- 1245.200 Scope of subpart.
- 1245.201 Policy and objective
- 1245.202 Definitions
- 1245.203 Authority to grant licenses

##### Restrictions and Conditions

- 1245.204 All licenses granted under this subpart

##### Types of Licenses

- 1245.205 Nonexclusive licenses.
- 1245.206 Exclusive and partially exclusive licenses

##### Procedures

- 1245.207 Application for a license.
- 1245.208 Processing applications
- 1245.209 Notice to Attorney General
- 1245.210 Modification and termination of licenses
- 1245.211 Appeals.
- 1245.212 Protection and administration of inventions.

- 1245.213 Transfer of custody
- 1245.214 Confidentiality of information.

Authority: 35 U.S.C. Section 207 and 208, 94 Stat. 3023 and 3024

#### Subpart 2—Licensing of NASA Inventions

##### § 1245.200 Scope of subpart.

This subpart prescribes the terms, conditions, and procedures upon which a NASA invention may be licensed. It does not affect licenses which (a) were in effect prior to July 1, 1981; (b) may exist at the time of the Government's acquisition of title to the invention, including those resulting from the allocation of rights to inventions made under Government research and development contracts; (c) are the result of an authorized exchange of rights in the settlement of patent disputes; or (d) are otherwise authorized by law or treaty.

##### § 1245.201 Policy and objective.

It is the policy and objective of this subpart to use the patent system to promote the utilization of inventions arising from NASA supported research and development.

##### § 1245.202 Definitions.

(a) "Federally owned invention" means an invention, plant, or design which is covered by a patent, or patent application in the United States or a patent, patent application, plant variety protection, or other form of protection, in a foreign country, title to which has been assigned to or otherwise vested in the United States Government.

(b) "Federal agency" means an executive department, military department, Government corporation, or independent establishment, except the Tennessee Valley Authority, which has custody of a Federally owned invention.

(c) "NASA Invention" means a Federally owned invention with respect to which NASA maintains custody and administration, in whole or in part, of the right, title, or interest in such invention on behalf of the United States Government.

(d) "Small business firm" means a small business concern as defined at section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of these regulations, the size standard for small business concerns involved in Government procurement, contained in 13 CFR 121.3-8, and in subcontracting, contained in 13 CFR 121.3-12, will be used.

(e) "Practical application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to

operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

(f) "United States" means the United States of America, its territories and possessions, the District of Columbia, and the Commonwealth of Puerto Rico.

##### § 1245.203 Authority to grant licenses.

NASA inventions shall be made available for licensing as deemed appropriate in the public interest. NASA may grant nonexclusive, partially exclusive, or exclusive licenses thereto under this subpart on inventions in its custody.

##### Restrictions and Conditions

##### § 1245.204 All licenses granted under this subpart.

(a) *Restrictions.* (1) A license may be granted only if the applicant has supplied NASA with a satisfactory plan for development or marketing of the invention, or both, and with information about the applicant's capability to fulfill the plan.

(2) A license granting rights to use or sell under a NASA invention in the United States shall normally be granted only to a licensee who agrees that any products embodying the invention or produced through the use of the invention will be manufactured substantially in the United States.

(b) *Conditions.* Licenses shall contain such terms and conditions as NASA determines are appropriate for the protection of the interests of the Federal Government and the public and are not in conflict with law or this subpart. The following terms and conditions apply to any license:

(1) The duration of the license shall be for a period specified in the license agreement, unless sooner terminated in accordance with this subpart.

(2) The license may be granted for all or less than all fields of use of the invention or in specified geographical areas or both.

(3) The license may extend to subsidiaries of the licensee or other parties if provided for in the license but shall be nonassignable without approval of NASA, except to the successor of that part of the licensee's business to which the invention pertains.

(4) The license may provide the licensee the right to grant sublicenses under the license, subject to the approval of NASA. Each sublicense shall make reference to the license, including the rights retained by the Government, and a copy of such



sublicense shall be furnished to NASA.

(5) The license shall require the licensee to carry out the plan for development or marketing of the invention, or both, to bring the invention to practical application within a period specified in the license, and to continue to make the benefits of the invention reasonably accessible to the public.

(6) The license shall require the licensee to report periodically on the utilization or efforts at obtaining utilization that are being made by the licensee, with particular reference to the plan submitted.

(7) All licenses shall normally require royalties or other consideration.

(8) Where an agreement is obtained pursuant to § 1245.204(a)(2) that any products embodying the invention or produced through use of the invention will be manufactured substantially in the United States, the license shall recite such agreement.

(9) The license shall provide for the right of NASA to terminate the license, in whole or in part, if:

(i) NASA determines that the licensee is not executing the plan submitted with its request for a license and the licensee cannot otherwise demonstrate to the satisfaction of NASA that it has taken or can be expected to take within a reasonable time effective steps to achieve practical application of the invention;

(ii) NASA determines that such action is necessary to meet requirements for public use specified by Federal regulations issued after the date of the license and such requirements are not reasonably satisfied by the licensee;

(iii) The licensee has willfully made a false statement of or willfully omitted a material fact in the license application or in any report required by the license agreement; or

(iv) The licensee commits a substantial breach of a covenant or agreement contained in the license.

(10) The license may be modified or terminated, consistent with this subpart, upon mutual agreement of NASA and the licensee.

(11) Nothing relating to the grant of a license, nor the grant itself, shall be construed to confer upon any person any immunity from or defenses under the antitrust laws or from a charge of patent misuse, and the acquisition and use of rights pursuant to this subpart shall not be immunized from the operation of state or Federal law by reason of the source of the grant.

## Types of Licenses

### § 1245.205 Nonexclusive licenses.

(a) *Availability of licenses.* Nonexclusive licenses may be granted under NASA inventions without publication of availability or notice of a prospective license.

(b) *Conditions.* In addition to the provisions of § 1245.204, the nonexclusive license may also provide that, after termination of a period specified in the license agreement, NASA may restrict the license to the fields of use or geographic areas, or both, in which the licensee has brought the invention to practical application and continues to make the benefits of the invention reasonably accessible to the public. However, such restriction shall be made only in order to grant an exclusive or partially exclusive license in accordance with this subpart.

### § 1245.206 Exclusive and partially exclusive licenses.

(a) *Domestic licenses.*

(1) *Availability of licenses.* Exclusive or partially exclusive licenses may be granted on NASA inventions: (i) 3 months after notice of the invention's availability has been announced in the **Federal Register**; or (ii) without such notice where NASA determines that expeditious granting of such a license will best serve the interests of the Federal Government and the public; and (iii) in either situation, specified in (a)(1)(i) or (ii) of this section only if:

(A) Notice of a prospective license, identifying the invention and the prospective licensee, has been published in the **Federal Register**, providing opportunity for filing written objections within a 60-day period;

(B) After expiration of the period in § 1245.206(a) (1)(iii)(A) and consideration of any written objections received during the period, NASA has determined that:

(1) The interests of the Federal Government and the public will best be served by the proposed license, in view of the applicant's intentions, plans, and ability to bring the invention to practical application or otherwise promote the invention's utilization by the public;

(2) The desired practical application has not been achieved, or is not likely expeditiously to be achieved, under any nonexclusive license which has been granted, or which may be granted, on the invention;

(3) Exclusive or partially exclusive licensing is a reasonable and necessary incentive to call forth the investment of risk capital and expenditures to bring the invention to practical application or

otherwise promote the invention's utilization by the public; and

(4) The proposed terms and scope of exclusivity are not greater than reasonably necessary to provide the incentive for bringing the invention to practical application or otherwise promote the invention's utilization by the public;

(C) NASA has not determined that the grant of such license will tend substantially to lessen competition or result in undue concentration in any section of the country in any line of commerce to which the technology to be licensed relates, or to create or maintain other situations inconsistent with the antitrust laws; and

(D) NASA has given first preference to any small business firms submitting plans that are determined by the agency to be within the capabilities of the firms and as equally likely, if executed, to bring the invention to practical application as any plans submitted by applicants that are not small business firms.

(2) *Conditions.* In addition to the provisions of § 1245.204, the following terms and conditions apply to domestic exclusive and partially exclusive licenses:

(i) The license shall be subject to the irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention on behalf of the United States and on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.

(ii) The license shall reserve to NASA the right to require the licensee to grant sublicenses to responsible applicants, on reasonable terms, when necessary to fulfill health or safety needs.

(iii) The license shall be subject to any licenses in force at the time of the grant of the exclusive or partially exclusive license.

(iv) The license may grant the licensee the right of enforcement of the licensed patent pursuant to the provisions of Chapter 29 of Title 35, United States Code, or other statutes, as determined appropriate in the public interest.

(b) *Foreign licenses.*

(1) *Availability of licenses.* Exclusive or partially exclusive licenses may be granted on a NASA invention covered by a foreign patent, patent application, or other form of protection, provided that:

(i) Notice of a prospective license, identifying the invention and prospective licensee, has been published in the **Federal Register**, providing opportunity for filing written objections



# PATENT LICENSING REGULATIONS

within a 60-day period and following consideration of such objections;

(ii) NASA has considered whether the interests of the Federal Government or United States industry in foreign commerce will be enhanced; and

(iii) NASA has not determined that the grant of such license will tend substantially to lessen competition or result in undue concentration in any section of the United States in any line of commerce to which the technology to be licensed relates, or to create or maintain other situations inconsistent with antitrust laws.

(2) *Conditions.* In addition to the provisions of § 1245.204, the following terms and conditions apply to foreign exclusive and partially exclusive licenses:

(i) The license shall be subject to the irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention on behalf of the United States and on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.

(ii) The license shall be subject to any licenses in force at the time of the grant of the exclusive or partially exclusive license.

(iii) The license may grant the licensee the right to take any suitable and necessary actions to protect the licensed property, on behalf of the Federal Government.

(c) *Record of determinations.* NASA shall maintain a record of determinations to grant exclusive or partially exclusive licenses.

## Procedures

### § 1245.207 Application for a license.

An application for a license should be addressed to the Patent Counsel at the NASA installation having responsibility for the invention and shall normally include:

(a) Identification of the invention for which the license is desired, including the patent application serial number or patent number, title, and date, if known;

(b) Identification of the type of license for which the application is submitted;

(c) Name and address of the person, company, or organization applying for the license and the citizenship or place of incorporation of the applicant;

(d) Name, address, and telephone number of representative of applicant to whom correspondence should be sent;

(e) Nature and type of applicant's business, identifying products or services which the applicant has successfully commercialized, and

approximate number of applicant's employees;

(f) Source of information concerning the availability of a license on the invention;

(g) A statement indicating whether applicant is a small business firm as defined in § 1245.202(c);

(h) A detailed description of applicant's plan for development or marketing of the invention, or both, which should include:

(1) A statement of the time, nature and amount of anticipated investment of capital and other resources which applicant believes will be required to bring the invention to practical application;

(2) A statement as to applicant's capability and intention to fulfill the plan, including information regarding manufacturing, marketing, financial, and technical resources;

(3) A statement of the fields of use for which applicant intends to practice the invention; and

(4) A statement of the geographic areas in which applicant intends to manufacture any products embodying the invention and geographic areas where applicant intends to use or sell the invention, or both;

(i) Identification of licenses previously granted to applicant under Federally owned inventions;

(j) A statement containing applicant's best knowledge of the extent to which the invention is being practiced by private industry or Government, or both, or is otherwise available commercially; and

(k) Any other information which applicant believes will support a determination to grant the license to applicant.

### § 1245.208 Processing applications.

(a) Applications for licenses will be initially reviewed by the Patent Counsel of the NASA installation having responsibility for the invention. The Patent Counsel shall make a preliminary recommendation to the Director of Licensing, NASA Headquarters, whether to: (1) grant the license as requested, (2) grant the license with modification after negotiation with the licensee, or (3) deny the license. The Director of Licensing shall review the preliminary recommendation of the Patent Counsel and make a final recommendation to the NASA Assistant General Counsel for Patent Matters. Such review and final recommendation may include, and be based on, any additional information obtained from applicant and other sources that the Patent Counsel and the Director of Licensing deem relevant to

the license requested. The determination to grant or deny the license shall be made by the Assistant General Counsel for Patent Matters based on the final recommendation of the Director of Licensing.

(b) When notice of a prospective exclusive or partially exclusive license is published in the Federal Register in accordance with § 1245.206(a)(1)(iii)(A) or § 1245.206(b)(1)(i), any written objections received in response thereto will be considered by the Director of Licensing in making the final recommendation to the Assistant General Counsel for Patent Matters.

(c) If the requested license, including any negotiated modifications, is denied by the Assistant General Counsel for Patent Matters, the applicant may request reconsideration by filing a written request for reconsideration within 30 days after receiving notice of denial. This 30-day period may be extended for good cause.

(d) In addition to, or in lieu of requesting reconsideration, the applicant may also appeal the denial of the license in accordance with § 1245.211.

### § 1245.209 Notice to Attorney General.

A copy of the notice provided for in §§ 1245.206(a)(1)(iii)(A), and 1245.206(b)(1)(i) will be sent to the Attorney General.

### § 1245.210 Modification and termination of licenses.

Before modifying or terminating a license, other than by mutual agreement, NASA shall furnish the licensee and any sublicensee of record a written notice of intention to modify or terminate the license, and the licensee and any sublicensee shall be allowed 30 days after such notice to remedy any breach of the license or show cause why the license should not be modified or terminated.

### § 1245.211 Appeals.

(a) The following parties may appeal to the NASA Administrator or designee any decision or determination concerning the grant, denial, interpretation, modification, or termination of a license:

(1) A person whose application for a license has been denied;

(2) A licensee whose license has been modified or terminated, in whole or in part; or

(3) A person who timely filed a written objection in response to the notice required by § 1245.208(a)(1)(iii)(A) or



## PATENT LICENSING REGULATIONS

1245.208(b)(1)(i) and who can demonstrate to the satisfaction of NASA that such person may be damaged by the Agency action.

(b) Written notice of appeal must be filed within 30 days (or such other time as may be authorized for good cause shown) after receiving notice of the adverse decision or determination; including, an adverse decision following the request for reconsideration under § 1245.208(c). The notice of appeal, along with all supporting documentation should be addressed to the Administrator, National Aeronautics and Space Administration, Washington, DC 20546. Should the appeal raise a genuine dispute over material facts, fact-finding will be conducted by the NASA Inventions and Contributions Board. The person filing the appeal shall be

afforded an opportunity to be heard and to offer evidence in support of the appeal. The Chairperson of the Inventions and Contributions Board shall prepare written findings of fact and transmit them to the Administrator or designee. The decision on the appeal shall be made by the NASA Administrator or designee. There is no further right of administrative appeal from the decision of the Administrator or designee.

### § 1245.212 Protection and administration of inventions.

NASA may take any suitable and necessary steps to protect and administer rights to NASA inventions, either directly or through contract.

### § 1245.213 Transfer of custody.

NASA having custody of certain Federally owned inventions may transfer custody and administration in whole or in part, to another Federal agency, of the right, title, or interest in any such invention.

### § 1245.214 Confidentiality of information.

Title 35, United States Code, section 209, provides that any plan submitted pursuant to § 1245.207(h) and any report required by § 1245.204(b)(6) may be treated by NASA as commercial and financial information obtained from a person and privileged and confidential and not subject to disclosure under section 552 of Title 5 of the United States Code.

James M. Beggs,  
Administrator.

October 15, 1981.

[FR Doc. 81-31809 Filed 10-30-81. 8:45 am]

BILLING CODE 7510-01-M

## FOREIGN PATENT LICENSING REGULATIONS

Selected NASA inventions are also available for licensing in countries other than the United States in accordance with the NASA Foreign Patent Licensing Regulation (14 C.F.R. 1245.4), a copy of which is available from any NASA Patent Counsel. For abstracts of NASA-owned inventions available for licensing in countries other than the United States, see NASA SP-7038, "Significant NASA Inventions Available for Licensing in Countries Other Than the United States." A copy of this NASA publication is available from NASA Headquarters, Code GP-4, Washington, D.C., 20546



# Subject Categories

(1969 - 1973)

## 01 Aerodynamics

Includes aerodynamics of bodies, combinations, internal flow in ducts and turbomachinery; wings, rotors, and control surfaces. For applications see: 02 Aircraft and 32 Space Vehicles. For related information see also: 12 Fluid Mechanics; and 33 Thermodynamics and Combustion.

## 02 Aircraft

Includes fixed-wing airplanes, helicopters, gliders, balloons, ornithopters, etc., and specific types of complete aircraft (e.g., ground effect machines, STOL, and VTOL), flight tests; operating problems (e.g., sonic boom), safety and safety devices; economics; and stability and control. For basic research see: 01 Aerodynamics. For related information see also: 31 Space Vehicles; and 32 Structural Mechanics.

## 03 Auxiliary Systems

Includes fuel cells, energy conversion cells, and solar cells; auxiliary gas turbines; hydraulic, pneumatic and electrical systems, actuators; and inverters. For related information see also: 09 Electronic Equipment; 22 Nuclear Engineering; and 28 Propulsion Systems.

## 04 Biosciences

Includes aerospace medicine, exobiology, radiation effects on biological systems; physiological and psychological factors. For related information see also: 05 Biotechnology.

## 05 Biotechnology

Includes life support systems, human engineering; protective clothing and equipment; crew training and evaluation, and piloting. For related information see also: 04 Biosciences.

## 06 Chemistry

Includes chemical analysis and identification (e.g., spectroscopy). For applications see: 17 Materials, Metallic; 18 Materials, Nonmetallic, and 27 Propellants.

## 07 Communications

Includes communications equipment and techniques; noise; radio and communications blackout; modulation telemetry; tracking radar and optical observation; and wave propagation. For basic research see: 23 Physics, General; and 21 Navigation.

## 08 Computers

Includes computer operation and programming; and data processing. For applications, see specific categories. For related information see also: 19 Mathematics.

## 09 Electronic Equipment

Includes electronic test equipment and maintainability, component parts, e.g., electron tubes, tunnel diodes, transistors, integrated circuitry; microminiaturization. For basic research see: 10 Electronics. For related information see also: 07 Communications and 21 Navigation.

## 10 Electronics

Includes circuit theory; and feedback and control theory. For applications see: 09 Electronic Equipment. For related information see specific Physics categories.

## 11 Facilities, Research and Support

Includes airports; lunar and planetary bases including associated vehicles; ground support systems; related logistics; simulators; test facilities (e.g., rocket engine test stands, shock tubes, and wind tunnels); test ranges, and tracking stations.

## 12 Fluid Mechanics

Includes boundary-layer flow, compressible flow; gas dynamics; hydrodynamics; and turbulence. For related information see also: 01 Aerodynamics; and 33 Thermodynamics and Combustion.

## 13 Geophysics

Includes aeronomy; upper and lower atmosphere studies; oceanography, cartography; and geodesy. For related information see also: 20 Meteorology; 29 Space Radiation; and 30 Space Sciences.

## 14 Instrumentation and Photography

Includes design, installation, and testing of instrumentation systems; gyroscopes; measuring instruments and gages; recorders, transducers; aerial photography; and telescopes and cameras.

## 15 Machine Elements and Processes

Includes bearings, seals, pumps, and other mechanical equipment; lubrication, friction, and wear; manufacturing processes and quality control; reliability; drafting; and materials fabrication, handling, and inspection.

## 16 Masers

Includes applications of masers and lasers. For basic research see: 26 Physics, Solid-State.

## 17 Materials, Metallic

Includes cermets; corrosion; physical and mechanical properties of materials; metallurgy; and applications as structural materials. For basic research see: 06 Chemistry. For related information see also: 18 Materials, Nonmetallic; and 32 Structural Mechanics.

## 18 Materials, Nonmetallic

Includes corrosion; physical and mechanical properties of materials (e.g., plastics); and elastomers, hydraulic fluids, etc. For basic research see: 06 Chemistry. For related information see also: 17 Materials, Metallic; 27 Propellants; and 32 Structural Mechanics.



**19 Mathematics**

Includes calculation methods and theory; and numerical analysis. For applications see specific categories. For related information see also 08 Computers.

**20 Meteorology**

Includes climatology; weather forecasting, and visibility studies. For related information see also 13 Geophysics; and 30 Space Sciences

**21 Navigation**

Includes guidance; autopilots, star and planet tracking, inertial platforms, and air traffic control. For related information see also 07 Communications.

**22 Nuclear Engineering**

Includes nuclear reactors and nuclear heat sources used for propulsion and auxiliary power. For basic research see 24 Physics, Atomic, Molecular, and Nuclear. For related information see also 03 Auxiliary Systems; and 28 Propulsion Systems

**23 Physics, General**

Includes acoustics, cryogenics, mechanics, and optics. For astrophysics see: 30 Space Sciences. For geophysics and related information see also 13 Geophysics, 20 Meteorology, and 29 Space Radiation

**24 Physics, Atomic, Molecular, and Nuclear**

Includes atomic, molecular and nuclear physics. For applications see 22 Nuclear Engineering. For related information see also 29 Space Radiation.

**25 Physics, Plasma**

Includes magnetohydrodynamics. For applications see 28 Propulsion Systems.

**26 Physics, Solid-State**

Includes semiconductor theory, and superconductivity. For applications see: 16 Masers. For related information see also 10 Electronics

**27 Propellants**

Includes fuels; igniters; and oxidizers. For basic research see: 06 Chemistry; and 33 Thermodynamics and Combustion. For related information see also 28 Propulsion Systems.

**28 Propulsion Systems**

Includes air breathing, electric, liquid, solid, and magnetohydrodynamic propulsion. For nuclear propulsion see 22 Nuclear Engineering. For basic research see 23 Physics, General, and 33 Thermodynamics and Combustion. For applications see 31 Space Vehicles. For related information see also 27 Propellants.

**29 Space Radiation**

Includes cosmic radiation; solar flares; solar radiation, and Van Allen radiation belts. For related information see also: 13 Geophysics, and 24 Physics, Atomic, Molecular, and Nuclear

**30 Space Sciences**

Includes astronomy and astrophysics, cosmology, lunar and planetary flight and exploration, and theoretical analysis of orbits and trajectories. For related information see also: 11 Facilities, Research and Support, and 31 Space Vehicles

**31 Space Vehicles**

Includes launch vehicles, manned space capsules, clustered and multistage rockets; satellites, sounding rockets and probes; and operating problems. For basic research see 30 Space Sciences. For related information see also 28 Propulsion Systems; and 32 Structural Mechanics.

**32 Structural Mechanics**

Includes structural element design and weight analysis, fatigue, thermal stress; impact phenomena; vibration, flutter, inflatable structures; and structural tests. For related information see also: 17 Materials, Metallic, and 18 Materials, Nonmetallic

**33 Thermodynamics and Combustion**

Includes ablation, cooling, heating, heat transfer, thermal balance, and other thermal effects, and combustion theory. For related information see also 12 Fluid Mechanics, and 27 Propellants

**34 General**

Includes information of a broad nature related to industrial applications and technology, and to basic research, defense aspects; information retrieval, management; law and related legal matters, and legislative hearings and documents



# TABLE OF CONTENTS

## Section 1 • Abstracts

### Subject Categories (1974 - )

#### AERONAUTICS

Includes aeronautics (general); aerodynamics; air transportation and safety; aircraft communications and navigation, aircraft design, testing and performance, aircraft instrumentation; aircraft propulsion and power, aircraft stability and control, and research and support facilities (air)

For related information see also *Astronautics*

#### 01 AERONAUTICS (GENERAL)

#### 02 AERODYNAMICS

Includes aerodynamics of bodies, combinations, wings, rotors, and control surfaces, and internal flow in ducts and turbomachinery

For related information see also *34 Fluid Mechanics and Heat Transfer*

#### 03 AIR TRANSPORTATION AND SAFETY

Includes passenger and cargo air transport operations, and aircraft accidents.

For related information see also *16 Space Transportation* and *85 Urban Technology and Transportation*

#### 04 AIRCRAFT COMMUNICATIONS AND NAVIGATION

Includes digital and voice communication with aircraft, air navigation systems (satellite and ground based), and air traffic control.

For related information see also *17 Spacecraft Communications, Command and Tracking* and *32 Communications*.

#### 05 AIRCRAFT DESIGN, TESTING AND PERFORMANCE

Includes aircraft simulation technology.

For related information see also *18 Spacecraft Design, Testing and Performance* and *39 Structural Mechanics*

#### 06 AIRCRAFT INSTRUMENTATION

Includes cockpit and cabin display devices; and flight instruments.

For related information see also *19 Spacecraft Instrumentation* and *35 Instrumentation and Photography*

#### 07 AIRCRAFT PROPULSION AND POWER

Includes prime propulsion systems and systems components, e.g., gas turbine engines and compressors; and on-board auxiliary power plants for aircraft

For related information see also *20 Spacecraft Propulsion and Power*, *28 Propellants and Fuels*, and *44 Energy Production and Conversion*

#### 08 AIRCRAFT STABILITY AND CONTROL

Includes aircraft handling qualities; piloting, flight controls; and autopilots

#### 09 RESEARCH AND SUPPORT FACILITIES (AIR)

Includes airports, hangars and runways; aircraft repair and overhaul facilities, wind tunnels, shock tube facilities, and engine test blocks.

For related information see also *14 Ground Support Systems and Facilities (Space)*.

## ASTRONAUTICS

Includes astronautics (general), astrodynamics, ground support systems and facilities (space), launch vehicles and space vehicles, space transportation, spacecraft communications, command and tracking, spacecraft design, testing and performance; spacecraft instrumentation; and spacecraft propulsion and power

For related information see also *Aeronautics*

#### 12 ASTRONAUTICS (GENERAL)

For extraterrestrial exploration see *91 Lunar and Planetary Exploration*

#### 13 ASTRODYNAMICS

Includes powered and free-flight trajectories; and orbit and launching dynamics

#### 14 GROUND SUPPORT SYSTEMS AND FACILITIES (SPACE)

Includes launch complexes, research and production facilities; ground support equipment, e.g., mobile transporters, and simulators

For related information see also *09 Research and Support Facilities (Air)*

#### 15 LAUNCH VEHICLES AND SPACE VEHICLES

Includes boosters; manned orbital laboratories; reusable vehicles, and space stations

#### 16 SPACE TRANSPORTATION

Includes passenger and cargo space transportation, e.g., shuttle operations; and rescue techniques.

For related information see also *03 Air Transportation and Safety* and *85 Urban Technology and Transportation*

#### 17 SPACECRAFT COMMUNICATION, COMMAND AND TRACKING

Includes telemetry; space communications networks; astronavigation; and radio blackout

For related information see also *04 Aircraft Communications and Navigation* and *32 Communications*

#### 18 SPACECRAFT DESIGN, TESTING AND PERFORMANCE

Includes spacecraft thermal and environmental control; and attitude control.

For life support systems see *54 Man/System Technology and Life Support* For related information see also *05 Aircraft Design, Testing and Performance* and *39 Structural Mechanics*

#### 19 SPACECRAFT INSTRUMENTATION

For related information see also *06 Aircraft Instrumentation* and *35 Instrumentation and Photography*

#### 20 SPACECRAFT PROPULSION AND POWER

Includes main propulsion systems and components, e.g., rocket engines, and spacecraft auxiliary power sources

For related information see also *07 Aircraft Propulsion and Power*, *28 Propellants and Fuels*, and *44 Energy Production and Conversion*



## **CHEMISTRY AND MATERIALS**

Includes chemistry and materials (general); composite materials; inorganic and physical chemistry; metallic materials, nonmetallic materials, and propellants and fuels

### **23 CHEMISTRY AND MATERIALS (GENERAL)**

Includes biochemistry and organic chemistry.

### **24 COMPOSITE MATERIALS**

Includes laminates

### **25 INORGANIC AND PHYSICAL CHEMISTRY**

Includes chemical analysis, e g , chromatography, combustion theory; electrochemistry, and photochemistry

For related information see also 77 *Thermodynamics and Statistical Physics*

### **26 METALLIC MATERIALS**

Includes physical, chemical, and mechanical properties of metals, e g , corrosion, and metallurgy

### **27 NONMETALLIC MATERIALS**

Includes physical, chemical, and mechanical properties of plastics, elastomers, lubricants, polymers, textiles, adhesives, and ceramic materials

### **28 PROPELLANTS AND FUELS**

Includes rocket propellants, igniters, and oxidizers, storage and handling; and aircraft fuels

For related information see also 07 *Aircraft Propulsion and Power*, 20 *Spacecraft Propulsion and Power*, and 44 *Energy Production and Conversion*

## **ENGINEERING**

Includes engineering (general), communications, electronics and electrical engineering; fluid mechanics and heat transfer, instrumentation and photography; lasers and masers; mechanical engineering; quality assurance and reliability, and structural mechanics

For related information see also *Physics*.

### **31 ENGINEERING (GENERAL)**

Includes vacuum technology, control engineering, display engineering; and cryogenics

### **32 COMMUNICATIONS**

Includes land and global communications, communications theory, and optical communications.

For related information see also 04 *Aircraft Communications and Navigation* and 17 *Spacecraft Communications, Command and Tracking*

### **33 ELECTRONICS AND ELECTRICAL ENGINEERING**

Includes test equipment and maintainability, components, e g , tunnel diodes and transistors, micro-miniaturization, and integrated circuitry

For related information see also 60 *Computer Operations and Hardware* and 76 *Solid-State Physics*

### **34 FLUID MECHANICS AND HEAT TRANSFER**

Includes boundary layers, hydrodynamics, fluidics, mass transfer, and ablation cooling

For related information see also 02 *Aerodynamics* and 77 *Thermodynamics and Statistical Physics*

## **35 INSTRUMENTATION AND PHOTOGRAPHY**

Includes remote sensors, measuring instruments and gages; detectors, cameras and photographic supplies, and holography

For aerial photography see 43 *Earth Resources* For related information see also 06 *Aircraft Instrumentation* and 19 *Spacecraft Instrumentation*

## **36 LASERS AND MASERS**

Includes parametric amplifiers

## **37 MECHANICAL ENGINEERING**

Includes auxiliary systems (non-power); machine elements and processes, and mechanical equipment.

## **38 QUALITY ASSURANCE AND RELIABILITY**

Includes product sampling procedures and techniques, and quality control

## **39 STRUCTURAL MECHANICS**

Includes structural element design and weight analysis, fatigue; and thermal stress

For applications see 05 *Aircraft Design, Testing and Performance* and 18 *Spacecraft Design, Testing and Performance*

## **GEOSCIENCES**

Includes geosciences (general); earth resources; energy production and conversion; environment pollution, geophysics, meteorology and climatology, and oceanography

For related information see also *Space Sciences*.

## **42 GEOSCIENCES (GENERAL)**

### **43 EARTH RESOURCES**

Includes remote sensing of earth resources by aircraft and spacecraft, photogrammetry; and aerial photography

For instrumentation see 35 *Instrumentation and Photography*

### **44 ENERGY PRODUCTION AND CONVERSION**

Includes specific energy conversion systems, e g., fuel cells and batteries, global sources of energy, fossil fuels; geophysical conversion; hydroelectric power; and wind power.

For related information see also 07 *Aircraft Propulsion and Power*, 20 *Spacecraft Propulsion and Power*, 28 *Propellants and Fuels*, and 85 *Urban Technology and Transportation*.

### **45 ENVIRONMENT POLLUTION**

Includes air, noise, thermal and water pollution, environment monitoring; and contamination control.

### **46 GEOPHYSICS**

Includes aeronomy, upper and lower atmosphere studies, ionospheric and magnetospheric physics; and geomagnetism.

For space radiation see 93 *Space Radiation*

### **47 METEOROLOGY AND CLIMATOLOGY**

Includes weather forecasting and modification

### **48 OCEANOGRAPHY**

Includes biological, dynamic and physical oceanography, and marine resources



## **LIFE SCIENCES**

Includes sciences (general), aerospace medicine, behavioral sciences, man/system technology and life support; and planetary biology

### **51 LIFE SCIENCES (GENERAL)**

Includes genetics

### **52 AEROSPACE MEDICINE**

Includes physiological factors; biological effects of radiation; and weightlessness

### **53 BEHAVIORAL SCIENCES**

Includes psychological factors; individual and group behavior, crew training and evaluation; and psychiatric research.

### **54 MAN/SYSTEM TECHNOLOGY AND LIFE SUPPORT**

Includes human engineering; biotechnology; and space suits and protective clothing

### **55 PLANETARY BIOLOGY**

Includes exobiology; and extraterrestrial life.

## **MATHEMATICAL AND COMPUTER SCIENCES**

Includes mathematical and computer sciences (general); computer operations and hardware; computer programming and software; computer systems, cybernetics; numerical analysis; statistics and probability, systems analysis; and theoretical mathematics.

### **59 MATHEMATICAL AND COMPUTER SCIENCES (GENERAL)**

### **60 COMPUTER OPERATIONS AND HARDWARE**

Includes computer graphics and data processing.  
For components see *33 Electronics and Electrical Engineering*.

### **61 COMPUTER PROGRAMMING AND SOFTWARE**

Includes computer programs, routines, and algorithms.

### **62 COMPUTER SYSTEMS**

Includes computer networks.

### **63 CYBERNETICS**

Includes feedback and control theory.  
For related information see also *54 Man/System Technology and Life Support*

### **64 NUMERICAL ANALYSIS**

Includes iteration, difference equations, and numerical approximation.

### **65 STATISTICS AND PROBABILITY**

Includes data sampling and smoothing; Monte Carlo method; and stochastic processes.

### **66 SYSTEMS ANALYSIS**

Includes mathematical modeling; network analysis; and operations research.

## **67 THEORETICAL MATHEMATICS**

Includes topology and number theory

## **PHYSICS**

Includes physics (general), acoustics; atomic and molecular physics; nuclear and high-energy physics; optics; plasma physics; solid-state physics, and thermodynamics and statistical physics

For related information see also *Engineering*

### **70 PHYSICS (GENERAL)**

For geophysics see *46 Geophysics*. For astrophysics see *90 Astrophysics* For solar physics see *92 Solar Physics*

### **71 ACOUSTICS**

Includes sound generation, transmission, and attenuation.

For noise pollution see *45 Environment Pollution*.

### **72 ATOMIC AND MOLECULAR PHYSICS**

Includes atomic structure and molecular spectra.

### **73 NUCLEAR AND HIGH-ENERGY PHYSICS**

Includes elementary and nuclear particles; and reactor theory.

For space radiation see *93 Space Radiation*

### **74 OPTICS**

Includes light phenomena.

### **75 PLASMA PHYSICS**

Includes magnetohydrodynamics and plasma fusion.

For ionospheric plasmas see *46 Geophysics* For space plasmas see *90 Astrophysics*.

### **76 SOLID-STATE PHYSICS**

Includes superconductivity.

For related information see also *33 Electronics and Electrical Engineering* and *36 Lasers and Masers*.

### **77 THERMODYNAMICS AND STATISTICAL PHYSICS**

Includes quantum mechanics; and Bose and Fermi statistics.

For related information see also *25 Inorganic and Physical Chemistry* and *34 Fluid Mechanics and Heat Transfer*.

## **SOCIAL SCIENCES**

Includes social sciences (general); administration and management; documentation and information science; economics and cost analysis; law and political science; and urban technology and transportation.

### **80 SOCIAL SCIENCES (GENERAL)**

Includes educational matters

### **81 ADMINISTRATION AND MANAGEMENT**

Includes management planning and research.



## **82 DOCUMENTATION AND INFORMATION SCIENCE**

Includes information storage and retrieval technology, micrography, and library science

For computer documentation see *61 Computer Programming and Software*

## **83 ECONOMICS AND COST ANALYSIS**

Includes cost effectiveness studies

## **84 LAW AND POLITICAL SCIENCE**

Includes space law, international law, international cooperation, and patent policy

## **85 URBAN TECHNOLOGY AND TRANSPORTATION**

Includes applications of space technology to urban problems, technology transfer, technology assessment, and surface and mass transportation.

For related information see *03 Air Transportation and Safety*, *16 Space Transportation*, and *44 Energy Production and Conversion*

## **SPACE SCIENCES**

Includes space sciences (general); astronomy, astrophysics, lunar and planetary exploration, solar physics, and space radiation

For related information see also *Geosciences*

## **88 SPACE SCIENCES (GENERAL)**

### **89 ASTRONOMY**

Includes radio and gamma-ray astronomy, celestial mechanics, and astrometry.

### **90 ASTROPHYSICS**

Includes cosmology, and interstellar and interplanetary gases and dust

### **91 LUNAR AND PLANETARY EXPLORATION**

Includes planetology, and manned and unmanned flights

For spacecraft design see *18 Spacecraft Design, Testing and Performance* For space stations see *15 Launch Vehicles and Space Vehicles*

### **92 SOLAR PHYSICS**

Includes solar activity, solar flares, solar radiation and sunspots

### **93 SPACE RADIATION**

Includes cosmic radiation, and inner and outer earth's radiation belts

For biological effects of radiation see *52 Aerospace Medicine* For theory see *73 Nuclear and High-Energy Physics*

## **GENERAL**

### **99 GENERAL**

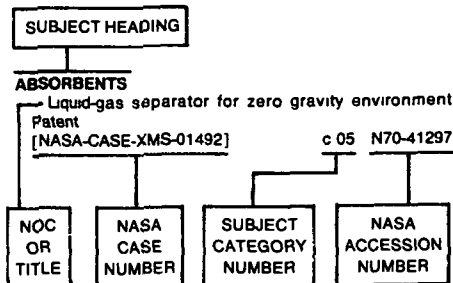
## **Section 2 • Indexes**

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### Section 2

### Typical Subject Index Listing



The subject heading is the key to the subject content of the document. A brief description of the document, e.g., title, title plus a title extension, or Notation of Content (NOC), is included for each subject entry to indicate the subject heading context; these descriptions are arranged under each subject heading in ascending accession number order. The NASA Case Number serves as the prime access number to the patent documents. The Subject Category Number indicates the category in Section 1 (Abstracts) in which the patent citation and abstract are located. The NASA accession number denotes the number by which the citation is identified within the subject category

### A

#### ABERRATION

High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N82-24973

#### ABILITIES

Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 54 N81-15699

#### ABLATION

Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075

Hypersonic test facility Patent  
[NASA-CASE-XLA-00378] c 11 N71-15925

Hypersonic test facility Patent  
[NASA-CASE-XLA-05378] c 11 N71-21475

Ablation sensor Patent  
[NASA-CASE-XLA-01794] c 33 N71-21586

Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991

Ablative system  
[NASA-CASE-LEW-10359] c 33 N72-25911

#### ABLATIVE MATERIALS

Method for making a heat insulating and ablative structure  
[NASA-CASE-XMS-01108] c 15 N69-24322

Ablation sensor  
[NASA-CASE-XLA-01781] c 14 N69-39975

Method for molding compounds Patent  
[NASA-CASE-XLA-01091] c 15 N71-10672

Ablative resin Patent  
[NASA-CASE-XLE-05913] c 33 N71-14032

Ablation structures Patent  
[NASA-CASE-XMS-01816] c 33 N71-15623

Method and apparatus for making a heat insulating and ablative structure Patent  
[NASA-CASE-XMS-02009] c 33 N71-20834

Thermal protection ablation spray system Patent  
[NASA-CASE-XLA-04251] c 18 N71-26100

Stand-off type ablative heat shield  
[NASA-CASE-MSC-12143-1] c 33 N72-17947

Ablative system  
[NASA-CASE-LEW-10359] c 33 N72-25911

Ablative system  
[NASA-CASE-LEW-10359-2] c 33 N73-25952

Ablation article and method  
[NASA-CASE-LAR-10439-1] c 33 N73-27796

Dual measurement ablation sensor  
[NASA-CASE-LAR-10105-1] c 34 N74-15652

Sprayable low density ablator and application process  
[NASA-CASE-MFS-23506-1] c 24 N78-24290

Intumescent-ablator coatings using endothermic fillers  
[NASA-CASE-ARC-11043-1] c 24 N78-27180

Cork-resin ablative insulation for complex surfaces and method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388

Controlled overspray spray nozzle  
[NASA-CASE-MFS-25139-1] c 34 N82-13376

Thermal protection system  
[NASA-CASE-MSC-18796-1] c 24 N82-26389

**ABORT APPARATUS**  
Coupling for linear shaped charge Patent  
[NASA-CASE-XLA-00189] c 33 N70-36846

**ABRASION**  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540

**ABRASION RESISTANCE**  
Potassium silicate zinc coatings  
[NASA-CASE-GSC-10361-1] c 18 N72-23581

Process for producing a well-adhered durable optical coating on an optical plastic substrate --- abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854

Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371

Heat sealable, flame and abrasion resistant coated fabric --- clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238

Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MSC-18382-2] c 27 N82-24344

**ABSORBENTS**  
Liquid-gas separator for zero gravity environment Patent  
[NASA-CASE-XMS-01492] c 05 N70-41297

Fluid flow control valve Patent  
[NASA-CASE-XLE-00703] c 15 N71-15967

Noncontaminating swabs  
[NASA-CASE-MFS-18100] c 15 N72-11390

Protein sterilization method of firefly luciferase using reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c 06 N73-27086

Oil and fat absorbing polymers  
[NASA-CASE-NPO-11609-2] c 27 N77-31308

Absorbent product and articles made therefrom  
[NASA-CASE-MSC-18223-2] c 52 N82-26960

**ABSORBERS (EQUIPMENT)**  
Variable response load limiting device --- for aircraft seats  
[NASA-CASE-LAR-12801-1] c 37 N82-20544

Absorbent product to absorb fluids --- for collection of human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29362

**ABSORBERS (MATERIALS)**  
Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462

Analytical photoionization mass spectrometer with an argon gas filter between the light source and monochromator Patent  
[NASA-CASE-LAR-10180-1] c 06 N71-13461

Filter system for control of outgas contamination in vacuum Patent  
[NASA-CASE-MFS-14711] c 15 N71-26185

Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051

Aldehyde-containing urea-absorbing polysaccharides  
[NASA-CASE-NPO-13620-1] c 27 N77-30236

Electromagnetic power absorber  
[NASA-CASE-NPO-13830-1] c 32 N80-14281

**ABSORPTION**  
Differential optoacoustic absorption detector  
[NASA-CASE-NPO-13759-1] c 74 N78-17867

#### ABSORPTION CROSS SECTIONS

Penetrating radiation system for detecting the amount of liquid in a tank Patent  
[NASA-CASE-MSC-12280] c 27 N71-16348

#### ABSORPTION SPECTRA

Stark effect spectrophone for continuous absorption spectra monitoring --- a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159

Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N82-26652

#### ABSORPTIVITY

Detector absorptivity measuring method and apparatus  
[NASA-CASE-LAR-10907-1] c 35 N76-29551

#### AC GENERATORS

Signal generator  
[NASA-CASE-XNP-05612] c 09 N69-21468

Superconducting alternator  
[NASA-CASE-XLE-02824] c 03 N69-39890

Superconducting alternator Patent  
[NASA-CASE-XLE-02823] c 09 N71-23443

#### ACCELERATION

Single grid accelerator for an ion thruster  
[NASA-CASE-XLE-10453-2] c 28 N73-27699

#### ACCELERATION (PHYSICS)

Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815

Gravity device Patent  
[NASA-CASE-XMF-00424] c 11 N70-38196

Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881

Active vibration isolator for flexible bodies Patent  
[NASA-CASE-LAR-10106-1] c 15 N71-27169

G-load measuring and indicator apparatus --- for aircraft  
[NASA-CASE-ARC-10806] c 06 N74-27872

Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c 09 N74-30597

G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c 35 N75-29381

Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806

#### ACCELERATION PROTECTION

Universal pilot restraint suit and body support therefor Patent  
[NASA-CASE-XAC-00405] c 05 N70-41819

G conditioning suit Patent  
[NASA-CASE-XLA-02898] c 05 N71-20268

#### ACCELERATION STRESSES (PHYSIOLOGY)

Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881

#### ACCELERATION TOLERANCE

Peak acceleration limiter for vibrational tester Patent  
[NASA-CASE-NPO-10556] c 14 N71-27185

#### ACCELERATORS

Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071

Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c 35 N77-18417

#### ACCELEROMETERS

Superconductive accelerometer Patent  
[NASA-CASE-XMF-01099] c 14 N71-15969

Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
[NASA-CASE-XGS-03532] c 14 N71-17627

Omnidirectional acceleration device Patent  
[NASA-CASE-HQN-10780] c 14 N71-30265

Angular velocity and acceleration measuring apparatus  
[NASA-CASE-ERC-10292] c 14 N72-25410

Temperature compensated digital inertial sensor --- circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c 35 N74-15094

Accelerometer telemetry system  
[NASA-CASE-ARC-10849-1] c 17 N76-29347

#### ACCEPTABILITY

Cross correlation anomaly detection system  
[NASA-CASE-NPO-13283] c 38 N78-17395



## ACCEPTOR MATERIALS

- III-V photocathode with nitrogen doping for increased quantum efficiency  
[NASA-CASE-NPO-12134-1] c 33 N76-31409
- ACCUMULATORS**  
Direct radiation cooling of the collector of linear beam tubes  
[NASA-CASE-XNP-09227] c 15 N69-24319  
Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41992  
Small plasma probe Patent  
[NASA-CASE-XLE-02578] c 25 N71-20747  
Electrostatic collector for charged particles  
[NASA-CASE-LEW-11192-1] c 09 N73-13208  
Accumulator  
[NASA-CASE-MFS-19287-1] c 34 N77-30399  
Method for fabricating solar cells having integrated collector grids  
[NASA-CASE-LEW-12819-2] c 44 N79-18444  
Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N81-24711  
Urine collection apparatus — feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740  
Sweat collection capsule  
[NASA-CASE-ARC-11031-1] c 52 N81-29763  
Multistage depressed collector for dual mode operation — for microwave transmitting tubes  
[NASA-CASE-LEW-13282-1] c 33 N82-24415
- ACETALS**  
Synthesis of polymers schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243
- ACETATES**  
Thermoplastic rubber comprising ethylene-vinyl acetate copolymer, asphalt and fluxing oil  
[NASA-CASE-NPO-08835-1] c 27 N78-33228
- ACETYLENE**  
Dicyanoacetylene polymers Patent  
[NASA-CASE-XNP-03250] c 06 N71-23500  
Polyphenylquinoxalines containing pendant phenylethynyl and ethynyl groups — thermoplastic resins  
[NASA-CASE-LAR-12838-1] c 27 N82-26463
- ACOUSTIC ATTENUATION**  
Ultrasonic calibration device — for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c 35 N76-15432
- ACOUSTIC DUCTS**  
Noise suppressor — for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418
- ACOUSTIC IMPEDANCE**  
Method for detecting hydrogen gas  
[NASA-CASE-XMF-03873] c 06 N69-39733
- ACOUSTIC LEVITATION**  
Method and apparatus for shaping and enhancing acoustical levitation forces  
[NASA-CASE-MFS-25050-1] c 71 N81-15767  
Acoustic suspension system  
[NASA-CASE-NPO-15435-1] c 71 N81-27887  
Systems for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N82-11861  
Acoustic system for material transport  
[NASA-CASE-NPO-15453-1] c 71 N82-12889  
Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 35 N82-24475  
Acoustic levitation methods and apparatus  
[NASA-CASE-NPO-15562-1] c 71 N82-27086
- ACOUSTIC MEASUREMENT**  
Instrumentation for measuring aircraft noise and sonic boom  
[NASA-CASE-LAR-11476-1] c 07 N76-27232  
Differential sound level meter  
[NASA-CASE-LAR-12106-1] c 71 N78-14867  
Pseudo continuous wave instrument — ultrasonics  
[NASA-CASE-LAR-12260-1] c 35 N79-10390  
System for monitoring physical characteristics of fluids — acoustic techniques  
[NASA-CASE-NPO-15400-1] c 34 N81-24384
- ACOUSTIC PROPAGATION**  
Material suspension within an acoustically excited resonant chamber — at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774  
Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753  
Acoustic bubble removal  
[NASA-CASE-NPO-15334-1] c 37 N82-22497
- ACOUSTIC PROPERTIES**  
Wind tunnel microphone structure Patent  
[NASA-CASE-XNP-00250] c 11 N71-28779  
Acoustical transducer calibrating system and apparatus  
[NASA-CASE-FRC-10060-1] c 14 N73-27379  
Pseudo continuous wave instrument — ultrasonics  
[NASA-CASE-LAR-12260-1] c 35 N79-10390

## ACOUSTICAL HOLOGRAPHY

- Hybrid holographic non-destructive test system  
[NASA-CASE-MFS-23114-1] c 38 N78-32447
- ACOUSTICS**  
Image readout device with electronically variable spatial resolution  
[NASA-CASE-LAR-12633-1] c 33 N82-24416
- ACOUSTO-OPTICS**  
Apparatus for testing wing harness by vibration generating means  
[NASA-CASE-MSC-15158-1] c 14 N72-17325  
Method and apparatus for background signal reduction in opto-acoustic absorption measurement  
[NASA-CASE-NPO-13683-1] c 35 N77-14411  
Differential optoacoustic absorption detector  
[NASA-CASE-NPO-13759-1] c 74 N78-17867  
Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015  
Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159  
Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N82-26652  
Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589
- ACRYLATES**  
Ablative resin Patent  
[NASA-CASE-XLE-05913] c 33 N71-14032
- ACRYLIC RESINS**  
Method of carbonizing polyacrylonitrile fibers and resulting product  
[NASA-CASE-ARC-11261-1] c 24 N81-29164
- ACRYLONITRILES**  
Method of carbonizing polyacrylonitrile fibers and resulting product  
[NASA-CASE-ARC-11261-1] c 24 N81-29164
- ACTIVATED CARBON**  
Sewage sludge additive  
[NASA-CASE-NPO-13877-1] c 45 N82-11634
- ACTIVATION ENERGY**  
Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579  
Method of making emf cell  
[NASA-CASE-LEW-11359-2] c 03 N72-20034
- ACTIVE CONTROL**  
Linear magnetic bearings — active magnetic suspension of armatures  
[NASA-CASE-GSC-12582-1] c 37 N81-16469
- ACTUATOR DISKS**  
Cryogenic gyroscope housing — with annular disks for gas spin-up  
[NASA-CASE-MFS-21136-1] c 35 N74-18323
- ACTUATORS**  
Electromechanical actuator  
[NASA-CASE-XNP-05975] c 15 N69-23185  
Bimetallic power controlled actuator  
[NASA-CASE-XNP-09776] c 09 N69-39929  
Gas actuated bolt disconnect Patent  
[NASA-CASE-XLA-00326] c 03 N70-34667  
Hermetically sealed explosive release mechanism Patent  
[NASA-CASE-XGS-00824] c 15 N71-16078  
Burst diaphragm flow initiator Patent  
[NASA-CASE-MFS-12915] c 11 N71-17600  
Controllers Patent  
[NASA-CASE-XMS-07487] c 15 N71-23255  
Mechanical actuator Patent  
[NASA-CASE-XGS-04548] c 15 N71-24045  
Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611  
Electromechanical control actuator system Patent  
[NASA-CASE-ERC-10022] c 15 N71-26635  
Energy limiter for hydraulic actuators Patent  
[NASA-CASE-ARC-10131-1] c 15 N71-27754  
Telemetry actuated switch  
[NASA-CASE-ARC-10105] c 09 N72-17153  
Mechanically actuated triggered hand  
[NASA-CASE-MFS-20413] c 15 N72-21463  
Hermetically sealed elbow actuator  
[NASA-CASE-MFS-14710] c 09 N72-22195  
Ball screw linear actuator  
[NASA-CASE-NPO-11222] c 15 N72-25456  
Rotary actuator  
[NASA-CASE-NPO-10244] c 15 N72-26371  
Gas operated actuator  
[NASA-CASE-NPO-11340] c 15 N72-33477  
Redundant hydraulic control system for actuators  
[NASA-CASE-MFS-20944] c 15 N73-13466  
Electrolytic gas operated actuator  
[NASA-CASE-NPO-11369] c 15 N73-13467  
Manual actuator — for spacecraft exercising machines  
[NASA-CASE-MFS-21481-1] c 37 N74-18127  
Optically actuated two position mechanical mover  
[NASA-CASE-NPO-13105-1] c 37 N74-21060

- Dual output variable pitch turbofan actuation system  
[NASA-CASE-LEW-12419-1] c 07 N77-14025  
Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735  
Cyclical bi-directional rotary actuator  
[NASA-CASE-GSC-11883-1] c 37 N77-19458  
Actuator mechanism  
[NASA-CASE-GSC-11883-2] c 37 N78-31426  
Pressure limiting propellant actuating system  
[NASA-CASE-MSC-18179-1] c 20 N80-18097  
Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432  
Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483  
Slotted variable camber flap  
[NASA-CASE-LAR-12541-1] c 05 N82-18203  
Tubing and cable cutting tool  
[NASA-CASE-LAR-12786-1] c 37 N82-20545  
Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205  
Solar powered actuator with continuously variable auxiliary power control  
[NASA-CASE-MFS-25637-1] c 44 N82-26780
- ADAPTERS**  
Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474
- ADAPTIVE CONTROL**  
Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633  
Synchronous dc direct drive system Patent  
[NASA-CASE-GSC-10065-1] c 10 N71-27136  
Ergometer  
[NASA-CASE-MFS-21109-1] c 05 N73-27941  
Adaptive voting computer system  
[NASA-CASE-MSC-13932-1] c 62 N74-14920  
Adaptive polarization separation  
[NASA-CASE-LAR-12196-1] c 33 N81-26358  
Adaptive control system for line-commutated inverters  
[NASA-CASE-MFS-25209-1] c 33 N81-31480  
Adaptive reference voltage generator for firing angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N81-31481  
Apparatus for damping operator induced oscillations of a controlled system — flight control  
[NASA-CASE-FRC-11041-1] c 33 N82-18493
- ADAPTIVE FILTERS**  
Adaptive tracking notch filter system Patent  
[NASA-CASE-XMF-01892] c 10 N71-22986  
Apparatus for damping operator induced oscillations of a controlled system — flight control  
[NASA-CASE-FRC-11041-1] c 33 N82-18493
- ADAPTIVE OPTICS**  
Fluorescent radiation converter  
[NASA-CASE-GSC-12528-1] c 74 N81-24900
- ADDING CIRCUITS**  
Full binary adder Patent  
[NASA-CASE-XGS-00689] c 08 N70-34787  
Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c 09 N71-18843
- ADDITION RESINS**  
Tackifier for addition polyimides containing monoethylphthalate  
[NASA-CASE-LAR-12642-1] c 27 N81-29229
- ADDITIVES**  
Ammonium perchlorate composite propellant containing an organic transitional metal chelate catalytic additive Patent  
[NASA-CASE-LAR-10173-1] c 27 N71-14090  
Additive for zinc electrodes  
[NASA-CASE-LEW-13286-1] c 44 N81-27597  
Sewage sludge additive  
[NASA-CASE-NPO-13877-1] c 45 N82-11634
- ADDRESSING**  
Automatic multi-banking of memory for microprocessors  
[NASA-CASE-NPO-15295-1] c 60 N82-11785
- ADENOSINE TRIPHOSPHATE**  
Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487  
Light detection instrument Patent  
[NASA-CASE-XGS-05534] c 23 N71-16355  
Lyophilized reaction mixtures Patent  
[NASA-CASE-XGS-05532] c 06 N71-17705  
Automatic instrument for chemical processing to detect microorganisms in biological samples by measuring light reactions  
[NASA-CASE-GSC-11169-2] c 05 N73-32011  
Application of luciferase assay for ATP to antimicrobial drug susceptibility  
[NASA-CASE-GSC-12039-1] c 51 N77-22794



**ADHESION**

- Stud-bonding gun  
[NASA-CASE-MFS-20299] c 15 N72-11392
- Improved refractory coatings — sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209
- Refractory coatings  
[NASA-CASE-LEW-13169-2] c 26 N82-30371

**ADHESION TESTS**

- Apparatus for the determination of the existence or non-existence of a bonding between two members Patent  
[NASA-CASE-MFS-13686] c 15 N71-18132
- High performance filletting sealant  
[NASA-CASE-ARC-11409-1] c 27 N82-32490

**ADHESIVE BONDING**

- Solar cell mounting Patent  
[NASA-CASE-XNP-00826] c 03 N71-20895
- Honeycomb panel and method of making same Patent  
[NASA-CASE-XMF-01402] c 18 N71-21651
- Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828
- Method and apparatus for attaching physiological monitoring electrodes Patent  
[NASA-CASE-XFR-07658-1] c 05 N71-26293
- Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c 37 N75-15992
- Weld-bonded titanium structures  
[NASA-CASE-LAR-11549-1] c 37 N77-11397
- Method of adhering bone to a rigid substrate using a graphite fiber reinforced bone cement  
[NASA-CASE-NPO-13764-1] c 27 N78-17215
- Thermal barrier coating system  
[NASA-CASE-LEW-12554-1] c 34 N78-18355
- Thermal insulation attaching means — adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221
- Surface finishing  
[NASA-CASE-MSC-12631-3] c 27 N81-14077
- Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-13359-1] c 27 N81-24265
- Method of bonding plasticized elastomer to metal and articles produced thereby  
[NASA-CASE-MFS-25181-1] c 27 N82-24340

**ADHESIVES**

- Polyimide adhesives  
[NASA-CASE-LAR-11397-1] c 27 N75-29263
- Polyimide adhesives  
[NASA-CASE-LAR-12181-1] c 27 N78-17205
- Crystalline polyimides — reinforcing fibers for high temperature composites and adhesives as well as flame retardation  
[NASA-CASE-LAR-12099-1] c 27 N80-16158
- Thermal control coatings based on trialkoxysilane hydrolyzate binders — tolerance to ultraviolet radiation in vacuum  
[NASA-CASE-MFS-25620-1] c 24 N82-11118
- Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206
- Elastomer toughened polyimide adhesives  
[NASA-CASE-LAR-12775-1] c 27 N82-25384
- Thermal protection system  
[NASA-CASE-MSC-18796-1] c 24 N82-26389
- Hot melt recharge system  
[NASA-CASE-LAR-12881-1] c 27 N82-26464

**ADJUSTING**

- Instrument support with precise lateral adjustment Patent  
[NASA-CASE-XMF-00480] c 14 N70-39898
- Fine adjustment mount  
[NASA-CASE-MFS-20249] c 15 N72-11386
- Adjustable support  
[NASA-CASE-NPO-10721] c 15 N72-27484
- Clock setter  
[NASA-CASE-LAR-11458-1] c 35 N76-16392

**AERIAL RUDDERS**

- Thrust augmented spin recovery device  
[NASA-CASE-LAR-11970-2] c 08 N81-19130

**AEROACOUSTICS**

- Acoustically swept rotor — helicopter noise reduction  
[NASA-CASE-ARC-11106-1] c 05 N80-14107

**AERODYNAMIC BALANCE**

- Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N81-22358

**AERODYNAMIC BRAKES**

- Annular supersonic decelerator or drogue Patent  
[NASA-CASE-XLE-00222] c 02 N70-37939
- Lightweight, variable solidity knitted parachute fabric — for aerodynamic decelerators  
[NASA-CASE-LAR-10776-1] c 02 N74-10034

**AERODYNAMIC CHARACTERISTICS**

- Variable sweep wing aircraft Patent  
[NASA-CASE-XLA-00221] c 02 N70-33266

- Flight craft Patent  
[NASA-CASE-XAC-02058] c 02 N71-16087
- Space shuttle vehicle and system  
[NASA-CASE-MSC-12433] c 31 N73-14854
- Airfoil shape for flight at subsonic speeds — design analysis and aerodynamic characteristics of the GAW-1 airfoil  
[NASA-CASE-LAR-10585-1] c 02 N76-22154
- Curved centerline air intake for a gas turbine engine  
[NASA-CASE-LEW-13201-1] c 07 N81-14999

**AERODYNAMIC COEFFICIENTS**

- Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-1] c 05 N82-25240

**AERODYNAMIC CONFIGURATIONS**

- Variable-span aircraft Patent  
[NASA-CASE-XLA-00166] c 02 N70-34178
- Landing arrangement for aenal vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858
- Space capsule Patent  
[NASA-CASE-XLA-00149] c 31 N70-37938
- Hypersonic reentry vehicle Patent  
[NASA-CASE-XMS-04142] c 31 N70-41631
- Translating horizontal tail Patent  
[NASA-CASE-XLA-08801-1] c 02 N71-11043
- Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691] c 31 N71-15674
- Nacelle afterbody for jet engines Patent  
[NASA-CASE-XLA-10450] c 28 N71-21493
- Variable geometry rotor system  
[NASA-CASE-LAR-10557] c 02 N72-11018
- Ferry system  
[NASA-CASE-LAR-10574-1] c 11 N73-13257
- Multistage aerospace craft — perspective drawings of conceptual design  
[NASA-CASE-XMF-02263] c 05 N74-10907
- Supersonic fan blading — noise reduction in turbofan engines  
[NASA-CASE-LEW-11402-1] c 07 N74-28226
- Free wing assembly for an aircraft  
[NASA-CASE-FRC-10092-1] c 05 N79-12061

**AERODYNAMIC DRAG**

- Skin friction measuring device for aircraft  
[NASA-CASE-FRC-11029-1] c 06 N81-17057

**AERODYNAMIC HEATING**

- Heat protection apparatus Patent  
[NASA-CASE-XLA-00892] c 33 N71-17897
- Heat flux measuring system Patent  
[NASA-CASE-XFR-03802] c 33 N71-23085
- Stand-off type ablative heat shield  
[NASA-CASE-MSC-12143-1] c 33 N72-17947

**AERODYNAMIC LOADS**

- Propeller blade loading control Patent  
[NASA-CASE-XAC-00139] c 02 N70-34856
- Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279

**AERODYNAMIC NOISE**

- Apparatus for reducing aerodynamic noise in a wind tunnel  
[NASA-CASE-MFS-23099-1] c 09 N76-23273
- Acoustically swept rotor — helicopter noise reduction  
[NASA-CASE-ARC-11106-1] c 05 N80-14107
- Curved centerline air intake for a gas turbine engine  
[NASA-CASE-LEW-13201-1] c 07 N81-14999

**AERODYNAMIC STABILITY**

- Meteorological balloon Patent  
[NASA-CASE-XMF-04163] c 02 N71-23007
- Instrument for measuring the dynamic behavior of liquids Patent  
[NASA-CASE-XLA-05541] c 12 N71-26387
- Emergency earth orbital escape device  
[NASA-CASE-MSC-13281] c 31 N72-18859
- High lift aircraft — with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c 05 N75-25914
- Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c 05 N77-17029
- Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12720-1] c 09 N81-31229
- Annular wing  
[NASA-CASE-FRC-11007-2] c 05 N82-26277

**AERODYNAMIC STALLING**

- Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968

**AEROELASTICITY**

- Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12720-1] c 09 N81-31229
- Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12458-1] c 09 N81-31230

**AERONAUTICAL ENGINEERING**

- Differential pressure cell Patent  
[NASA-CASE-XAC-00042] c 14 N70-34816

**AEROSOLS**

- Liquid aerosol dispenser  
[NASA-CASE-MFS-20829] c 12 N72-21310

- Particulate and aerosol detector  
[NASA-CASE-LAR-11434-1] c 35 N76-22509
- Thermoluminescent aerosol analysis  
[NASA-CASE-LAR-12046-1] c 25 N78-15210

**AEROSPACE ENGINEERING**

- Solar cell including second surface mirrors Patent  
[NASA-CASE-NPO-10109] c 03 N71-11049
- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-10337] c 15 N71-24046
- Soldering device Patent  
[NASA-CASE-XLA-08911] c 15 N71-27214
- Installing fiber insulation  
[NASA-CASE-MSC-16973-1] c 37 N81-14317

**AEROSPACE ENVIRONMENTS**

- Electrostatic thruster with improved insulators Patent  
[NASA-CASE-XLE-01902] c 28 N71-10574
- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-01765] c 18 N71-10772
- Inorganic solid film lubricants Patent  
[NASA-CASE-XMF-03988] c 15 N71-21403
- Particle detection apparatus including a ballistic pendulum Patent  
[NASA-CASE-XMS-04201] c 14 N71-22990
- Alloys for bearings Patent  
[NASA-CASE-XLE-05033] c 15 N71-23810
- Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c 33 N71-24876
- Space simulator Patent  
[NASA-CASE-NPO-10141] c 11 N71-24964
- Cyclic switch Patent  
[NASA-CASE-LEW-10155-1] c 09 N71-29035
- Automatic bio-waste sampling  
[NASA-CASE-MSC-14640-1] c 54 N76-14804
- Wobble gear drive mechanism — for aerospace environments  
[NASA-CASE-WOO-00625] c 37 N78-17385
- Plasma cleaning device — designed for high vacuum environments  
[NASA-CASE-MFS-22906-1] c 75 N78-27913
- Process for spinning flame retardant elastomeric compositions — fabricating synthetic fibers for high oxygen environments  
[NASA-CASE-MSC-14331-3] c 27 N78-32262
- General purpose rocket furnace  
[NASA-CASE-MFS-23460-1] c 12 N79-26075
- Hot melt recharge system  
[NASA-CASE-LAR-12881-1] c 27 N82-26464

**AEROSPACE MEDICINE**

- Instrument for use in performing a controlled Valsalva maneuver Patent  
[NASA-CASE-XMS-01615] c 05 N70-41329
- Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721

**AEROSPACE VEHICLES**

- Landing arrangement for aenal vehicles Patent  
[NASA-CASE-XLA-00142] c 02 N70-33286
- Landing pad assembly for aerospace vehicles Patent  
[NASA-CASE-XMF-02853] c 31 N70-36654
- Landing arrangement for aerospace vehicle Patent  
[NASA-CASE-XLA-00805] c 31 N70-38010
- Flexibly connected support and skin Patent  
[NASA-CASE-XLA-01027] c 31 N71-24035
- Nondestructive spot test method for titanium and titanium alloys  
[NASA-CASE-LAR-10539-1] c 17 N73-12547

**AEROSPACEPLANES**

- Multistage aerospace craft — perspective drawings of conceptual design  
[NASA-CASE-XMF-02263] c 05 N74-10907

**AFTERBODIES**

- Nacelle afterbody for jet engines Patent  
[NASA-CASE-XLA-10450] c 28 N71-21493
- Missile rolling tail brake torque system — simulating bearing friction on canard controlled missiles  
[NASA-CASE-LAR-12751-1] c 37 N82-26675

**AFTERBURNING**

- Nozzle Patent  
[NASA-CASE-XLA-00154] c 28 N70-33374

**AGGLOMERATION**

- Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N82-27087

**AGING (MATERIALS)**

- Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236

**AGRICULTURE**

- Solar-powered pump  
[NASA-CASE-NPO-13567-1] c 44 N76-29701

**AILERONS**

- Control device Patent  
[NASA-CASE-XAC-10019] c 15 N71-23809

**AIR**

- Gas purg d dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080



- Superconductive magnetic-field-trapping device  
[NASA-CASE-XNP-01185] c 26 N73-28710
- AIR BREATHING ENGINES**  
Multiple pure tone elimination strut assembly --- air breathing engines  
[NASA-CASE-FRC-11062-1] c 71 N82-16800
- AIR CONDITIONING**  
Apparatus for supplying conditioned air at a substantially constant temperature and humidity  
[NASA-CASE-GSC-12191-1] c 31 N80-32583  
Automotive absorption air conditioner utilizing solar and motor waste heat  
[NASA-CASE-NPO-15183-1] c 44 N82-26776
- AIR CONDITIONING EQUIPMENT**  
Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721  
Air conditioning system and component therefore distributing air flow from opposite directions  
[NASA-CASE-GSC-11445-1] c 31 N74-27902
- AIR COOLING**  
Modification and improvements to cooled blades Patent  
[NASA-CASE-XLE-00092] c 15 N70-33264
- AIR FILTERS**  
Gas filter mounting structure  
[NASA-CASE-MSC-12297] c 14 N72-23457
- AIR FLOW**  
Wind tunnel airstream oscillating apparatus Patent  
[NASA-CASE-XLA-00112] c 11 N70-33287  
Method of obtaining permanent record of surface flow phenomena Patent  
[NASA-CASE-XLA-01353] c 14 N70-41366  
Gas turbine combustor Patent  
[NASA-CASE-LEW-10286-1] c 28 N71-28915  
Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10612-1] c 12 N73-28144  
Air conditioning system and component therefore distributing air flow from opposite directions  
[NASA-CASE-GSC-11445-1] c 31 N74-27902  
Controlled separation combustor --- airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c 20 N76-14190  
Method and apparatus for fluffing, separating, and cleaning fibers  
[NASA-CASE-LAR-11224-1] c 37 N76-18456  
Smoke generator  
[NASA-CASE-ARC-10905-1] c 37 N77-13418  
Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384  
Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089  
Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366
- AIR INTAKES**  
Aeroflexible structures  
[NASA-CASE-XLA-06095] c 01 N69-39981  
Reversed cowl flap inlet thrust augmentor --- with adjustable airfoil  
[NASA-CASE-ARC-10754-1] c 07 N75-24736  
Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976  
Curved centerline air intake for a gas turbine engine  
[NASA-CASE-LEW-13201-1] c 07 N81-14999
- AIR JETS**  
Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 34 N82-20465  
Sphere forming method and apparatus  
[NASA-CASE-NPO-15070-1] c 31 N82-33567
- AIR LOCKS**  
Spacecraft airlock Patent  
[NASA-CASE-XLA-02050] c 31 N71-22968  
Thruster maintenance system Patent  
[NASA-CASE-MFS-20325] c 28 N71-27095  
An airlock  
[NASA-CASE-MFS-20922] c 31 N72-20840  
Airlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136  
Apparatus for inserting and removing specimens from high temperature vacuum furnaces  
[NASA-CASE-LAR-10841-1] c 31 N74-27900
- AIR NAVIGATION**  
Autonomous navigation system --- gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047
- AIR POLLUTION**  
Analytical photoionization mass spectrometer with an argon gas filter between the light source and monochromator Patent  
[NASA-CASE-LAR-10180-1] c 06 N71-13461  
Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922  
Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c 35 N74-11284
- Fluorescence detector for monitoring atmospheric pollutants  
[NASA-CASE-NPO-13231-1] c 45 N75-27585  
Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17656  
Indicator providing continuous indication of the presence of a specific pollutant in air  
[NASA-CASE-NPO-13474-1] c 45 N76-21742  
Method for detecting pollutants --- through chemical reactions and heat treatment  
[NASA-CASE-LAR-11405-1] c 45 N76-31714  
Combustion engine --- for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497  
Coal desulfurization process  
[NASA-CASE-NPO-13937-1] c 44 N78-31527
- AIR PURIFICATION**  
High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c 14 N71-17588  
Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721  
Cell and method for electrolysis of water and anode  
[NASA-CASE-MSC-16394-1] c 28 N81-24280
- AIR SAMPLING**  
Aerodynamic measuring device Patent  
[NASA-CASE-XLA-00481] c 14 N70-36824  
Sampler of gas borne particles  
[NASA-CASE-NPO-13396-1] c 35 N76-18401  
Mobile sampler for use in acquiring samples of terrestrial atmospheric gases  
[NASA-CASE-NPO-15220-1] c 35 N81-24414  
Automated syringe sampler --- remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407
- AIR TRAFFIC CONTROL**  
Traffic control system and method Patent  
[NASA-CASE-GSC-10087-1] c 02 N71-19287  
Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948  
Position location system and method  
[NASA-CASE-GSC-10087-3] c 07 N72-12080
- AIRBORNE EQUIPMENT**  
Inflatable radar reflector unit Patent  
[NASA-CASE-XMS-00893] c 07 N70-40063
- AIRBORNE/SPACEBORNE COMPUTERS**  
Ripple add and ripple subtract binary counters Patent  
[NASA-CASE-XGS-04766] c 08 N71-18602  
Shared memory for a fault-tolerant computer  
[NASA-CASE-NPO-13139-1] c 60 N76-21914
- AIRCRAFT**  
System for indicating direction of intruder aircraft  
[NASA-CASE-ERC-10226-1] c 14 N73-16483  
Thin conformal antenna array for microwave power conversions  
[NASA-CASE-NPO-13886-1] c 32 N78-24391
- AIRCRAFT ACCIDENTS**  
Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948
- AIRCRAFT ANTENNAS**  
Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558
- AIRCRAFT COMPARTMENTS**  
Low density bismaleimide-carbon microballoon composites --- aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184
- AIRCRAFT CONFIGURATIONS**  
Variable sweep wing configuration Patent  
[NASA-CASE-XLA-00230] c 02 N70-33255  
Television simulation for aircraft and space flight Patent  
[NASA-CASE-XFR-03107] c 09 N71-19449  
Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005  
Family of airfoil shapes for rotating blades --- for increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 05 N82-33372
- AIRCRAFT CONSTRUCTION MATERIALS**  
Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384
- AIRCRAFT CONTROL**  
Control for flexible parawing Patent  
[NASA-CASE-XLA-06958] c 02 N71-11038  
Altitude controls for VTOL aircraft Patent  
[NASA-CASE-XAC-08972] c 02 N71-20570  
Control device Patent  
[NASA-CASE-XAC-10019] c 15 N71-23809  
Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110  
High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088  
Mechanically limited, electrically operated hydraulic valve system for aircraft controls Patent  
[NASA-CASE-XAC-00048] c 02 N71-29128
- Flight control system  
[NASA-CASE-MSC-13397-1] c 21 N72-25595  
Aircraft control system  
[NASA-CASE-ERC-10439] c 02 N73-19004  
Display system  
[NASA-CASE-ERC-10350] c 14 N73-20474  
Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004  
Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c 05 N75-12930  
High lift aircraft --- with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c 05 N75-25914  
Filtering technique based on high-frequency plant modeling for high-gain control  
[NASA-CASE-LAR-12215-1] c 08 N79-23097  
Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106  
Pitch attitude stabilization system utilizing engine pressure ratio feedback signals  
[NASA-CASE-LAR-12562-1] c 08 N81-26152  
Propulsive lateral control nozzle  
[NASA-CASE-LAR-12136-1] c 08 N81-33210  
Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-1] c 05 N82-25240  
Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 04 N82-26260  
Hinged strake aircraft control system  
[NASA-CASE-LAR-12860-1] c 05 N82-26278
- AIRCRAFT DESIGN**  
Supersonic aircraft Patent  
[NASA-CASE-XLA-04451] c 02 N71-12243  
Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005  
Multistage aerospace craft --- perspective drawings of conceptual design  
[NASA-CASE-XMF-02263] c 05 N74-10907  
High lift aircraft --- with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c 05 N75-25914  
Oblique-wing supersonic aircraft  
[NASA-CASE-ARC-10470-3] c 05 N76-29217  
Supersonic transport --- using canard surfaces  
[NASA-CASE-LAR-11932-1] c 05 N78-32086  
Helicopter rotor airfoil  
[NASA-CASE-LAR-12396-1] c 02 N79-24958
- AIRCRAFT DETECTION**  
Altitude measuring system  
[NASA-CASE-ERC-10412-1] c 09 N73-12211  
Apparatus for measuring an aircraft's speed and height  
[NASA-CASE-LAR-12275-1] c 35 N79-18296
- AIRCRAFT ENGINES**  
Noise suppressor --- for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418  
Dual cycle aircraft turbine engine  
[NASA-CASE-LAR-11310-1] c 07 N77-28118  
Portable device for use in starting air-start-units for aircraft and having cable lead testing capability  
[NASA-CASE-FRC-10113-1] c 33 N80-26599  
Aircraft engine nozzle  
[NASA-CASE-ARC-10977-1] c 07 N80-32392
- AIRCRAFT EQUIPMENT**  
Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437  
Air speed and attitude probe  
[NASA-CASE-FRC-11009-1] c 06 N80-18036  
Cooling system for high speed aircraft  
[NASA-CASE-LAR-12406-1] c 05 N81-26114  
System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
[NASA-CASE-FRC-11005-1] c 06 N82-16075
- AIRCRAFT FUEL SYSTEMS**  
Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12321-1] c 37 N78-10467
- AIRCRAFT GUIDANCE**  
Terminal guidance system --- for guiding aircraft into preselected altitude and/or heading at terminal point  
[NASA-CASE-FRC-10049-1] c 04 N74-13420  
Sun sensing guidance system for high altitude aircraft  
[NASA-CASE-FRC-11052-1] c 04 N82-23231
- AIRCRAFT HAZARDS**  
Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c 28 N70-34788
- AIRCRAFT HYDRAULIC SYSTEMS**  
Gas turbine engine fuel control  
[NASA-CASE-LEW-11187-1] c 28 N73-19793  
Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205



## AIRCRAFT INSTRUMENTS

- Airplane take-off performance indicator Patent  
[NASA-CASE-XLA-00100] c 14 N70-36807
- Aerodynamic measuring device Patent  
[NASA-CASE-XLA-00481] c 14 N70-36824
- Aircraft instrument Patent  
[NASA-CASE-XLA-00487] c 14 N70-40157
- Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882
- Combined optical attitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268
- Head-up attitude display  
[NASA-CASE-ERC-10392] c 21 N73-14692
- G-load measuring and indicator apparatus  
[NASA-CASE-LAR-10806-1] c 35 N75-29381
- Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c 04 N76-20114
- Aircraft-mounted crash-activated transmitter device  
[NASA-CASE-MFS-16609-3] c 03 N76-32140

## AIRCRAFT LANDING

- Landing arrangement for aerial vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858
- Magnetic position detection method and apparatus  
[NASA-CASE-ARC-10179-1] c 21 N72-22619
- Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c 05 N75-12930
- Vehicle simulator binocular multiplanar visual display system  
[NASA-CASE-ARC-10808-1] c 09 N76-24280
- Full color hybrid display for aircraft simulators --- landing aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083
- Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212

## AIRCRAFT LAUNCHING DEVICES

- Rotating launch device for a remotely piloted aircraft  
[NASA-CASE-ARC-10979-1] c 09 N77-19076

## AIRCRAFT MANEUVERS

- G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c 35 N75-29381

## AIRCRAFT MODELS

- Test unit free-flight suspension system Patent  
[NASA-CASE-XLA-00939] c 11 N71-15926
- Variable geometry wind tunnels  
[NASA-CASE-XLA-07430] c 11 N72-22246
- Deploy/release system --- model aircraft flight control  
[NASA-CASE-LAR-11575-1] c 02 N76-16014

## AIRCRAFT NOISE

- Instrumentation for measuring aircraft noise and sonic boom  
[NASA-CASE-LAR-11476-1] c 07 N76-27232

## AIRCRAFT PERFORMANCE

- Ferry system  
[NASA-CASE-LAR-10574-1] c 11 N73-13257

## AIRCRAFT PILOTS

- Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c 09 N74-30597

## AIRCRAFT SAFETY

- Airplane take-off performance indicator Patent  
[NASA-CASE-XLA-00100] c 14 N70-36807
- Display research collision warning system  
[NASA-CASE-HQN-10703] c 21 N73-13643
- Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c 08 N74-30421
- Variable response load limiting device --- for aircraft seats  
[NASA-CASE-LAR-12801-1] c 37 N82-20544

## AIRCRAFT STABILITY

- Mechanical stability augmentation system Patent  
[NASA-CASE-XLA-06339] c 02 N71-13422
- Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004

## AIRCRAFT STRUCTURES

- Fatigue testing device Patent  
[NASA-CASE-XLA-02131] c 32 N70-42003
- Heat flux measuring system Patent  
[NASA-CASE-XFR-03802] c 33 N71-23085
- Three-axis adjustable loading structure  
[NASA-CASE-FRC-10051-1] c 35 N74-13129
- Transparent fire resistant polymeric structures  
[NASA-CASE-ARC-10813-1] c 27 N76-16230
- Wingtip vortex dissipator for aircraft  
[NASA-CASE-LAR-11645-1] c 02 N77-10001
- Aircraft canopy lock  
[NASA-CASE-FRC-11065-1] c 05 N81-24047

## AIRCRAFT TIRES

- Improved tire/wheel concept --- pneumatic aircraft tire  
[NASA-CASE-LAR-11695-2] c 37 N80-18402
- Tire/wheel concept  
[NASA-CASE-LAR-11695-2] c 37 N81-24443

## AIRCRAFT WAKES

- System for use in conducting wake investigation for a wing in flight --- differential pressure measurements for drag investigations  
[NASA-CASE-FRC-11024-1] c 02 N80-28300

## AIRFOIL PROFILES

- Family of airfoil shapes for rotating blades --- for increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 05 N82-33372

## AIRFOILS

- Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-00755] c 01 N71-13410
- Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-05828] c 01 N71-13411
- Wind tunnel  
[NASA-CASE-LAR-10135-1] c 09 N79-21083
- Surface finishing  
[NASA-CASE-MSC-12631-3] c 27 N81-14077

## AIRFRAMES

- Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005
- Cooling system for high speed aircraft  
[NASA-CASE-LAR-12406-1] c 05 N81-26114
- Explosively activated egress area  
[NASA-CASE-LAR-12824-1] c 03 N81-29107

## AIRSPEED

- Landing arrangement for aerial vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858
- Apparatus for measuring an aircraft's speed and height  
[NASA-CASE-LAR-12275-1] c 35 N79-18296
- Air speed and attitude probe  
[NASA-CASE-FRC-11009-1] c 06 N80-18036

## ALCOHOLS

- Tnfunctional alcohol  
[NASA-CASE-NPO-10714] c 06 N69-31244
- Laser coolant and ultraviolet filter  
[NASA-CASE-MFS-20180] c 16 N72-12440

## ALDEHYDES

- Direct synthesis of polymeric schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c 06 N71-11239
- Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c 06 N71-11242
- Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740
- Nuclear alkylated pyridine aldehyde polymers and conductive compositions thereof  
[NASA-CASE-NPO-10557] c 27 N78-17214
- Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13504-1] c 27 N81-27279

## ALIGNMENT

- Instrument support with precise lateral adjustment Patent  
[NASA-CASE-XMF-00480] c 14 N70-39898
- Portable alignment tool Patent  
[NASA-CASE-XMF-01452] c 15 N70-41371
- Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955
- Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688
- Aligning and positioning device Patent  
[NASA-CASE-XMS-04178] c 15 N71-22798
- Method and apparatus for aligning a laser beam projector Patent  
[NASA-CASE-NPO-11087] c 23 N71-29125
- Roll alignment detector  
[NASA-CASE-GSC-10514-1] c 14 N72-20379
- Zero gravity shadow shield aligner  
[NASA-CASE-KSC-10622-1] c 31 N72-21893
- Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397
- Spacecraft docking and alignment system --- using television camera system  
[NASA-CASE-MSC-12559-1] c 18 N76-14186
- Method of constructing dished ion thruster gnds to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c 20 N76-21276
- Optical alignment device  
[NASA-CASE-ARC-10932-1] c 74 N76-22993
- Precision alignment apparatus for cutting a workpiece  
[NASA-CASE-LAR-11658-1] c 37 N77-14478
- Guide for a typewriter  
[NASA-CASE-MFS-15218-1] c 37 N77-19457
- Rotary target V-block --- aligning wind tunnel apparatus for optical measurement  
[NASA-CASE-LAR-12007-2] c 74 N79-25876

- Rhomboid prism pair for rotating the plane of parallel light beams --- laser velocimeters  
[NASA-CASE-ARC-11311-1] c 74 N81-16882

## ALIPHATIC COMPOUNDS

- The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312

## ALKALI HALIDES

- Fire extinguishant materials  
[NASA-CASE-ARC-11252-1] c 25 N82-12168

## ALKALI METALS

- Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979
- Analytical test apparatus and method for determining oxide content of alkali metal Patent  
[NASA-CASE-XLE-01997] c 06 N71-23527
- Alkali metal silicate protective coating Patent  
[NASA-CASE-XGS-04799] c 18 N71-24183
- Heat activated cell with alkali anode and alkali salt electrolyte Patent  
[NASA-CASE-LEW-11358] c 03 N71-26084
- Preparation of alkali metal dispersions  
[NASA-CASE-XNP-08876] c 17 N73-28573
- Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229
- Alkali-metal silicate binders and methods of manufacture  
[NASA-CASE-GSC-12303-1] c 24 N79-31347
- Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 34 N81-22310
- Fire extinguishant materials  
[NASA-CASE-ARC-11252-1] c 25 N82-12168

## ALKALINE BATTERIES

- Method for determining the state of charge of batteries by the use of tracers Patent  
[NASA-CASE-XNP-01464] c 03 N71-10728
- Electrochemical coulometer and method of forming same Patent  
[NASA-CASE-XGS-05434] c 03 N71-20491
- Electrocatalyst for oxygen reduction  
[NASA-CASE-HQN-10537-1] c 06 N72-10138
- Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530
- Additive for zinc electrodes  
[NASA-CASE-LEW-13286-1] c 44 N81-27597
- Polyvinyl alcohol battery separator containing inert filler --- alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615
- Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 44 N81-29531
- Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641
- Separator for alkaline batteries and method of making same  
[NASA-CASE-GSC-10350-1] c 44 N82-24642
- Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643
- Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644
- Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370
- Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708

## ALKALINE EARTH OXIDES

- Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229

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- Fluorohydroxy ethers  
[NASA-CASE-MFS-10507] c 06 N73-30101

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- High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523

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- Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365
- Alloys for bearings Patent  
[NASA-CASE-XLE-05033] c 15 N71-23810
- Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875
- Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123
- Enhanced diffusion welding  
[NASA-CASE-LEW-11388-1] c 15 N73-32358
- Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125
- Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127



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Method and means for helium/hydrogen ratio measurement by alpha scattering  
[NASA-CASE-NPO-14079-1] c 25 N80-20334

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X-Y alphanumeric character generator for oscilloscopes  
[NASA-CASE-GSC-11582-1] c 33 N75-19517

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Ac power amplifier Patent Application  
[NASA-CASE-LAR-10218-1] c 09 N70-34559  
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[NASA-CASE-GSC-10041-1] c 10 N71-19418  
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[NASA-CASE-XMS-06061] c 05 N71-23317

Switching circuit Patent  
[NASA-CASE-XNP-06505] c 10 N71-24799

Pulse width inverter Patent  
[NASA-CASE-MFS-10068] c 10 N71-25139

Inverter with means for base current shaping for sweeping charge carriers from base region Patent  
[NASA-CASE-XGS-06226] c 10 N71-25950

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[NASA-CASE-GSC-11126-1] c 09 N72-25253

Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956

Solar cell system having alternating current output  
[NASA-CASE-LEW-12806-2] c 44 N81-12542

Power factor control system for ac induction motors  
[NASA-CASE-MFS-23988-1] c 33 N81-27395

Non-contacting power transfer device  
[NASA-CASE-GSC-12595-1] c 33 N82-24422

Energy saving electrical motor control system  
[NASA-CASE-MFS-25560-1] c 33 N82-30472

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Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376

## ALTITUDE

Combined optical altitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268

## ALTITUDE CONTROL

Check valve assembly for a probe Patent  
[NASA-CASE-XLA-00128] c 15 N70-37925

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Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443

Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047

Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828

Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142

Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830

Method of plating copper on aluminum Patent  
[NASA-CASE-XLA-08966-1] c 17 N71-25903

Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579

Method of making emf cell  
[NASA-CASE-LEW-11359-2] c 03 N72-20034

Method of preparing graphite reinforced aluminum composite  
[NASA-CASE-MFS-21077-1] c 24 N75-28135

Method of fluxless brazing and diffusion bonding of aluminum containing components  
[NASA-CASE-MSC-14435-1] c 37 N76-18455

Method for making an aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-1] c 44 N79-11469

Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N82-26629

High performance filletting sealant  
[NASA-CASE-ARC-11409-1] c 27 N82-32490

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Low temperature aluminum alloy Patent  
[NASA-CASE-XMF-02786] c 17 N71-20743

Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828

Method of producing complex aluminum alloy parts of high temper, and products thereof  
[NASA-CASE-MSC-19693-1] c 26 N78-24333

Nickel ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505

## ALUMINUM COATINGS

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[NASA-CASE-LEW-11267-1] c 17 N73-32414

Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209

Method of protecting the surface of a substrate --- by applying aluminate coating  
[NASA-CASE-LEW-11696-1] c 37 N75-13261

Duplex aluminized coatings  
[NASA-CASE-LEW-11696-2] c 26 N75-19408

Meteoroid impact position locator aid for manned space station  
[NASA-CASE-LAR-10629-1] c 35 N75-33367

Method of protecting a surface with a silicon-slurry/aluminate coating --- coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441

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Fire extinguishant materials  
[NASA-CASE-ARC-11252-1] c 25 N82-12168

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Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c 37 N75-15992

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c 24 N79-25143

Castable high temperature refractory materials  
[NASA-CASE-LEW-13080-2] c 27 N82-12120

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Inorganic thermal control pigment Patent  
[NASA-CASE-XNP-02139] c 18 N71-24184

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Preparation of heterocyclic block copolymer omega-diamidoximes  
[NASA-CASE-ARC-11060-1] c 27 N79-22300

Preparation of perfluorinated imidoylamidoximes --- for eventual preparation of heat and chemical resistant polymers  
[NASA-CASE-ARC-11267-1] c 23 N80-26386

Method for preparing addition type polyimide prepreps  
[NASA-CASE-LAR-12054-2] c 27 N81-14078

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[NASA-CASE-XMF-08655] c 06 N71-11239

Synthesis of polymers schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243

Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812

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[NASA-CASE-ARC-10469-1] c 25 N75-12086

Method of neutralizing the corrosive surface of amine-cured epoxy resins  
[NASA-CASE-GSC-12686-1] c 27 N82-10227

Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353

## AMINO ACIDS

Amino acid analysis  
[NASA-CASE-NPO-12130-1] c 25 N75-14844

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Solid state chemical source for ammonia beam maser Patent  
[NASA-CASE-XGS-01504] c 16 N70-41578

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High performance ammonium nitrate propellant  
[NASA-CASE-NPO-14260-1] c 28 N79-28342

## AMMONIUM PERCHLORATES

Ammonium perchlorate composite propellant containing an organic transitional metal chelate catalytic additive Patent  
[NASA-CASE-LAR-10173-1] c 27 N71-14090

Process for the leaching of AP from propellant  
[NASA-CASE-NPO-14109-1] c 28 N80-23471

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[NASA-CASE-XMS-05562-1] c 09 N69-39986

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[NASA-CASE-XGS-01784] c 10 N71-20782

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[NASA-CASE-XGS-01222] c 10 N71-20841

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[NASA-CASE-ARC-10042-2] c 10 N72-11256

High voltage transistor amplifier with constant current load  
[NASA-CASE-NPO-11023] c 09 N72-17155

Independent gain and bandwidth control of a traveling wave maser  
[NASA-CASE-NPO-13801-1] c 36 N78-18410

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[NASA-CASE-XMS-05307] c 09 N69-24330

Bio-isolated dc operational amplifier --- for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c 33 N74-21851

High stability amplifier  
[NASA-CASE-GSC-12646-1] c 33 N81-32391

High power metallic halide laser --- amplifying a copper chloride laser  
[NASA-CASE-NPO-14782-1] c 36 N82-28616

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[NASA-CASE-XGS-02812] c 09 N71-19466

Method and apparatus for continuously monitoring blood oxygenation, blood pressure, pulse rate and the pressure pulse curve utilizing an ear oximeter as transducer Patent  
[NASA-CASE-XAC-05422] c 04 N71-23185

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[NASA-CASE-NPO-10548] c 16 N71-24831

Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234

Transient augmentation circuit for pulse amplifiers Patent  
[NASA-CASE-XNP-01068] c 10 N71-28739

RC networks and amplifiers employing the same  
[NASA-CASE-XAC-05462-2] c 10 N72-17171

Full wave modulator-demodulator amplifier apparatus --- for generating rectified output signal  
[NASA-CASE-FRC-10072-1] c 33 N74-14939

Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014

Reflected-wave maser --- low noise amplifier  
[NASA-CASE-NPO-13490-1] c 36 N76-31512

Inductorless narrow-band filter/amplifier  
[NASA-CASE-GSC-12410-1] c 33 N79-24260

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[NASA-CASE-XMS-04061-1] c 09 N69-39885

Single or joint amplitude distribution analyzer Patent  
[NASA-CASE-XNP-01383] c 09 N71-10659

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[NASA-CASE-XNP-00477] c 08 N73-28045

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[NASA-CASE-XNP-05612] c 09 N69-21468

Demodulation system Patent  
[NASA-CASE-XAC-04030] c 10 N71-19472

Amplitude modulated laser transmitter Patent  
[NASA-CASE-XMS-04269] c 16 N71-22895

Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c 09 N71-23021

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[NASA-CASE-NPO-10302] c 10 N71-26142

Signal path series step biased multidevice high efficiency amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430

Gated compressor, distortionless signal limiter  
[NASA-CASE-NPO-11820-1] c 32 N74-19788

Amplitude steered array  
[NASA-CASE-GSC-11446-1] c 33 N74-20860

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[NASA-CASE-NPO-11945-1] c 36 N76-18427

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[NASA-CASE-MFS-25436-1] c 76 N81-30012

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[NASA-CASE-ARC-11118-1] c 52 N81-29764

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[NASA-CASE-MFS-13046] c 07 N71-19433

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[NASA-CASE-XFR-05637] c 09 N71-19480

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[NASA-CASE-ARC-10466-1] c 60 N75-13539

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[NASA-CASE-LEW-11881-1] c 33 N77-17354

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[NASA-CASE-GSC-12650-1] c 33 N82-10324



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[NASA-CASE-GSC-10880-1] c 08 N72-11172

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[NASA-CASE-NPO-10068] c 08 N71-19288  
Wide range data compression system Patent  
[NASA-CASE-XGS-02612] c 08 N71-19435  
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[NASA-CASE-ERC-10048] c 09 N72-25251  
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[NASA-CASE-GSC-12115-1] c 62 N76-31946  
Velocity measurement system  
[NASA-CASE-MFS-23363-1] c 35 N78-32396

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Apparatus for simulating optical transmission links  
[NASA-CASE-GSC-11877-1] c 74 N76-18913

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[NASA-CASE-XAC-00404] c 08 N70-40125  
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[NASA-CASE-XLA-00670] c 08 N71-12501  
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[NASA-CASE-XAC-04031] c 08 N71-18594  
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[NASA-CASE-XNP-04780] c 08 N71-19687  
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[NASA-CASE-LEW-10345-1] c 10 N71-25899  
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[NASA-CASE-NPO-10344] c 10 N71-26544  
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[NASA-CASE-XLA-06713] c 14 N71-28991  
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[NASA-CASE-NPO-11018] c 08 N72-21200  
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[NASA-CASE-MS-C-13110-1] c 08 N72-22163  
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[NASA-CASE-NPO-10560] c 08 N72-22166  
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[NASA-CASE-NPO-11016] c 08 N72-31226  
Counting digital filters  
[NASA-CASE-NPO-11821-1] c 08 N73-26175  
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[NASA-CASE-XNP-00477] c 08 N73-28045  
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[NASA-CASE-NPO-13385-1] c 33 N76-18345  
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[NASA-CASE-GSC-11839-3] c 60 N77-32731  
Electrochemical detection device — for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073  
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[NASA-CASE-NPO-10691] c 14 N71-26199  
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[NASA-CASE-XNP-09451] c 06 N71-26754  
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[NASA-CASE-ARC-10443-1] c 14 N73-20477  
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[NASA-CASE-ARC-10802-1] c 35 N75-30502  
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[NASA-CASE-MS-C-13802-2] c 35 N76-15431  
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[NASA-CASE-ARC-10639-1] c 35 N78-13400

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[NASA-CASE-XMF-05224] c 14 N71-23726  
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[NASA-CASE-MFS-20916] c 14 N73-25460

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[NASA-CASE-ARC-11036-1] c 35 N78-32395  
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[NASA-CASE-LAR-12326-1] c 02 N81-14968

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Internal flare angle gauge Patent  
[NASA-CASE-XMF-04415] c 14 N71-24693  
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[NASA-CASE-XGS-04173] c 19 N71-26674  
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Angular accelerometer Patent  
[NASA-CASE-XMS-05936] c 14 N70-41682

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[NASA-CASE-GSC-11444-1] c 14 N73-28490

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[NASA-CASE-LAR-12178-1] c 74 N80-21138

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Stretch de-spin mechanism Patent  
[NASA-CASE-XGS-00619] c 30 N70-40016  
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[NASA-CASE-LAR-12052-1] c 18 N81-29152

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Angular measurement system Patent  
[NASA-CASE-XMF-00447] c 14 N70-33179

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Angular position and velocity sensing apparatus Patent  
[NASA-CASE-XGS-05680] c 14 N71-17585  
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[NASA-CASE-GSC-12614-1] c 35 N81-12386  
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[NASA-CASE-NPO-14170-1] c 37 N81-15364

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[NASA-CASE-MFS-22356-1] c 23 N75-30256  
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[NASA-CASE-ARC-11107-1] c 25 N80-16116  
Prepolymer dianhydrides  
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[NASA-CASE-XMF-06409] c 06 N71-23230

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[NASA-CASE-ARC-10302-1] c 51 N74-15778  
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[NASA-CASE-ARC-10917-1] c 51 N78-27733

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Hybrid composite laminate structures  
[NASA-CASE-LEW-12118-1] c 24 N77-27188

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[NASA-CASE-XGS-04047-2] c 03 N72-11062  
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[NASA-CASE-LAR-12304-1] c 35 N80-20559

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[NASA-CASE-XLE-00222] c 02 N70-37939  
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[NASA-CASE-LEW-11358] c 03 N71-26084  
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[NASA-CASE-NPO-11806-1] c 44 N74-19693  
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[NASA-CASE-HQN-10876-1] c 33 N76-27473  
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[NASA-CASE-HQN-10862-1] c 44 N76-29699  
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[NASA-CASE-NPO-10870-1] c 33 N77-22386  
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[NASA-CASE-NPO-10857-1] c 33 N80-14330  
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[NASA-CASE-XLE-00035] c 33 N71-29151  
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[NASA-CASE-LEW-12048-1] c 20 N77-20162  
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[NASA-CASE-NPO-15786-1] c 25 N82-26397

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[NASA-CASE-XLA-00414] c 07 N70-38200  
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[NASA-CASE-NPO-13886-1] c 32 N78-24391  
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[NASA-CASE-NPO-13821-1] c 44 N78-28594  
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[NASA-CASE-GSC-12365-1] c 32 N80-28578  
Frequency translating phase conjugation circuit for active retrodirective antenna array — microwave transmission  
[NASA-CASE-NPO-14536-1] c 32 N81-14185  
Coaxial phased array antenna  
[NASA-CASE-MS-C-16800-1] c 32 N81-14187  
Baseband signal combiner for large aperture antenna array  
[NASA-CASE-NPO-14641-1] c 32 N81-29308  
Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MS-C-18606-1] c 32 N82-11336  
Multiple-beam, high-power, precision pointing antenna system  
[NASA-CASE-NPO-15406-1] c 33 N82-12345  
Spiral slotted phased antenna array  
[NASA-CASE-MS-C-18532-1] c 32 N82-27558  
Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 32 N82-33593

**ANTENNA COMPONENTS**  
Digital servo controller — for rotating antenna shaft  
[NASA-CASE-KSC-10769-1] c 33 N74-29556  
Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381

**ANTENNA COUPLERS**  
Dual band combiner for horn antenna  
[NASA-CASE-NPO-14519-1] c 32 N80-23524

**ANTENNA DESIGN**  
Low noise single aperture multimode monopulse antenna feed system Patent  
[NASA-CASE-XNP-01735] c 07 N71-22750  
Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984  
Antenna array phase quadrature tracking system Patent  
[NASA-CASE-MS-C-12205-1] c 07 N71-27056  
Unfurlable structure including coiled strips thrust launched upon tension release Patent  
[NASA-CASE-HQN-00937] c 07 N71-28979



- Antenna design for surface wave suppression Patent  
[NASA-CASE-XLA-10772] c 07 N71-28980
- Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c 10 N72-22235
- Collapsible high gain antenna  
[NASA-CASE-KSC-10392] c 07 N73-26117
- Dish antenna having switchable beamwidth --- with truncated concave ellipsoid subreflector  
[NASA-CASE-GSC-11760-1] c 33 N75-19516
- Horn antenna having V-shaped corrugated slots  
[NASA-CASE-LAR-11112-1] c 32 N76-15330
- Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365
- Furlable antenna --- antenna design  
[NASA-CASE-NPO-13553-1] c 33 N76-32457
- Collapsible corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539
- Multiple band circularly polarized microstrip antenna  
[NASA-CASE-MS-18334-1] c 32 N80-32604
- Spiral slotted phased antenna array  
[NASA-CASE-MS-18532-1] c 32 N82-27558

**ANTENNA FEEDS**

- Multi-feed cone Cassegrain antenna Patent  
[NASA-CASE-NPO-10539] c 07 N71-11285
- Horn feed having overlapping apertures Patent  
[NASA-CASE-GSC-10452] c 07 N71-12396
- Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c 10 N72-22235
- Composite antenna feed  
[NASA-CASE-GSC-11046-1] c 07 N73-28013
- Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c 32 N74-11000
- High efficiency multifrequency feed  
[NASA-CASE-GSC-11909] c 32 N74-20863
- Single frequency, two feed dish antenna having switchable beamwidth  
[NASA-CASE-GSC-11968-1] c 32 N76-15329
- Reflex feed system for dual frequency antenna with frequency cutoff means  
[NASA-CASE-NPO-14022-1] c 32 N78-31321
- Antenna feed system for receiving circular polarization and transmitting linear polarization  
[NASA-CASE-NPO-14362-1] c 32 N80-16261
- Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278
- Unequal split microwave power divider  
[NASA-CASE-LAR-12889-1] c 33 N81-31483
- Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 32 N82-10287
- Microwave switching power divider --- antenna feeds  
[NASA-CASE-GSC-12420-1] c 33 N82-16340
- Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 32 N82-33593

**ANTENNA RADIATION PATTERNS**

- Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462
- Dual mode horn antenna Patent  
[NASA-CASE-XNP-01057] c 07 N71-15907
- Electronic scanning of 2-channel monopulse patterns Patent  
[NASA-CASE-GSC-10299-1] c 09 N71-24804
- High impact antenna Patent  
[NASA-CASE-NPO-10231] c 07 N71-26101
- Triaxial antenna Patent  
[NASA-CASE-XGS-02290] c 07 N71-28809
- Lightning tracking system  
[NASA-CASE-KSC-10729-1] c 09 N73-32110
- Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365
- Coaxial phased array antenna  
[NASA-CASE-MS-16800-1] c 32 N81-14187
- Multiple-beam, high-power, precision pointing antenna system  
[NASA-CASE-NPO-15406-1] c 33 N82-12345
- Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 32 N82-33593

**ANTENNAS**

- Self-erecting reflector Patent  
[NASA-CASE-XGS-09190] c 31 N71-16102
- High impact antenna Patent  
[NASA-CASE-NPO-10231] c 07 N71-26101
- Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191
- Conical reflector antenna  
[NASA-CASE-NPO-10303] c 07 N72-22127
- Antenna grout replacement system  
[NASA-CASE-NPO-15205-1] c 37 N81-19457
- Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N82-26568

**ANTIBIOTICS**

- Determination of antimicrobial susceptibilities on infected unnes without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750

**ANTIFRICTION BEARINGS**

- Hybrid lubrication system and bearing Patent  
[NASA-CASE-XNP-01641] c 15 N71-22997
- Rolling element bearings Patent  
[NASA-CASE-XLE-09527-2] c 15 N71-26189
- High speed hybrid bearing comprising a fluid bearing and a rolling bearing connected in series  
[NASA-CASE-LEW-11152-1] c 15 N73-32359
- Production of hollow components for rolling element bearings by diffusion welding  
[NASA-CASE-LEW-11026-1] c 15 N73-33383
- Method of making bearing materials --- self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11930-4] c 24 N79-17916
- Method of making bearing material  
[NASA-CASE-LEW-11930-3] c 24 N80-33482

**ANTIGRAVITY**

- Anti-gravity device  
[NASA-CASE-MFS-22758-1] c 70 N75-26789

**ANTIHISTAMINICS**

- Indomethacin-anthistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-2] c 52 N81-14613
- Indomethacin-anthistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-1] c 52 N81-29764

**ANTIREFLECTION COATINGS**

- Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c 44 N77-14580

**ANVILS**

- Apparatus for making diamonds  
[NASA-CASE-MFS-20698] c 15 N72-20446

**APERTURES**

- Focusing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618
- Threadless fastener apparatus Patent  
[NASA-CASE-XFR-05302] c 15 N71-23254
- On-film optical recording of camera lens settings  
[NASA-CASE-MS-12363-1] c 14 N73-26431
- Method of forming aperture plate for electron microscope  
[NASA-CASE-ARC-10448-2] c 74 N75-12732
- Method of making an apertured casting --- using duplicate mold  
[NASA-CASE-LEW-11169-1] c 37 N76-23570
- Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408
- Clutter free synthetic aperture radar correlator  
[NASA-CASE-NPO-14035-1] c 32 N78-18266
- Heat reflecting field stop  
[NASA-CASE-LAR-12443-1] c 74 N82-19030

**APOLLO PROJECT**

- Space suit  
[NASA-CASE-MS-12609-1] c 05 N73-32012

**APOLLO SPACECRAFT**

- Energy absorbing structure Patent Application  
[NASA-CASE-MS-12279-1] c 15 N70-35679
- Low onset rate energy absorber  
[NASA-CASE-MS-12279] c 15 N72-17450

**APPLICATIONS OF MATHEMATICS**

- Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437

**APPROACH**

- Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059

**AQUATIC PLANTS**

- Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10-1] c 25 N82-25335

**AQUEOUS SOLUTIONS**

- Anti-fog composition --- for prevention of fogging on surfaces such as space helmet visors and windshields  
[NASA-CASE-MS-13530-2] c 23 N75-14834
- Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c 25 N76-18245
- Method for separating biological cells --- suspended in aqueous polymer systems  
[NASA-CASE-MFS-23883-1] c 51 N80-16715
- Method of forming dynamic membrane on stainless steel support  
[NASA-CASE-MS-18172-1] c 26 N80-19237
- Method of cross-linking polyvinyl alcohol and other water soluble resins  
[NASA-CASE-LEW-13103-1] c 27 N80-32516
- Electrophotolysis oxidation system for measurement of organic concentration in water  
[NASA-CASE-MS-16497-1] c 25 N82-12166

- Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441
- Coal desulfurization by aqueous chlorination  
[NASA-CASE-NPO-14902-1] c 25 N82-29371

**ARC DISCHARGES**

- Device for preventing high voltage arcing in electron beam welding Patent  
[NASA-CASE-XMF-08522] c 15 N71-19486
- Self-repeating plasma generator having communicating annular and linear arc discharge passages Patent  
[NASA-CASE-XLA-03103] c 25 N71-21693
- Method and apparatus for nondestructive testing --- using high frequency arc discharges  
[NASA-CASE-MFS-21233-1] c 38 N74-15395
- Sustained arc ignition system  
[NASA-CASE-LEW-12444-1] c 33 N77-28385

**ARC HEATING**

- Electric arc heater Patent  
[NASA-CASE-XLA-00330] c 33 N70-34540
- Electric arc device for heating gases Patent  
[NASA-CASE-XAC-00319] c 25 N70-41628
- Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071

**ARC JET ENGINES**

- Magneto-plasma-dynamic arc thruster  
[NASA-CASE-LEW-11180-1] c 25 N73-25760

**ARC LAMPS**

- Starting circuit for vapor lamps and the like Patent  
[NASA-CASE-XNP-01058] c 09 N71-12540
- Compact, high intensity arc lamp with internal magnetic field producing means  
[NASA-CASE-NPO-11510-1] c 33 N77-21315
- Depressurization of arc lamps  
[NASA-CASE-NPO-10790-1] c 33 N77-21316
- Arc control in compact arc lamps  
[NASA-CASE-NPO-10870-1] c 33 N77-22386
- Purging means and method for Xenon arc lamps  
[NASA-CASE-NPO-11978] c 31 N78-17238
- Multiple anode arc lamp system  
[NASA-CASE-NPO-10857-1] c 33 N80-14330

**ARC WELDING**

- Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871
- Automatic closed circuit television arc guidance control Patent  
[NASA-CASE-MFS-13046] c 07 N71-19433
- Device for preventing high voltage arcing in electron beam welding Patent  
[NASA-CASE-XMF-08522] c 15 N71-19486
- Welding skate with computerized control Patent  
[NASA-CASE-XMF-07069] c 15 N71-23815
- Grain refinement control in TIG arc welding  
[NASA-CASE-MS-19095-1] c 37 N75-19683

**ARCHITECTURE**

- Foldable construction block  
[NASA-CASE-MS-12233-2] c 32 N73-13921

**ARCHITECTURE (COMPUTERS)**

- Massively parallel processor computer  
[NASA-CASE-GSC-12223-1] c 60 N79-27864

**ARM (ANATOMY)**

- Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c 09 N74-30597
- Orthotic arm joint --- for use in mechanical arms  
[NASA-CASE-MFS-21611-1] c 54 N75-12616
- Controller arm for a remotely related slave arm  
[NASA-CASE-ARC-11052-1] c 37 N79-28551

**ARMATURES**

- Direct current motor with stationary armature and field Patent  
[NASA-CASE-XGS-05290] c 09 N71-25999
- Solenoid valve including guide for armature and valve member  
[NASA-CASE-GSC-10607-1] c 15 N72-20442
- Electric motive machine including magnetic bearing  
[NASA-CASE-XGS-07805] c 15 N72-33476
- Natural turbulence electrical power generator --- using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834
- Linear magnetic bearings --- active magnetic suspension of armatures  
[NASA-CASE-GSC-12582-1] c 37 N81-16469

**AROMATIC COMPOUNDS**

- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N76-32315
- Polymeric foams from cross-linkable poly-n-arylenebenzimidazoles  
[NASA-CASE-ARC-11008-1] c 27 N78-31232
- Process for preparing thermoplastic aromatic polyimides  
[NASA-CASE-LAR-11828-1] c 27 N78-32261



- Curing agent for polyepoxides and epoxy resins and composites cured therewith — preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260
- The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312
- ARRAYS**  
Radio frequency arraying method for receivers  
[NASA-CASE-NPO-14328-1] c 32 N80-18253  
Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659
- ARTERIES**  
Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c 52 N74-27566
- ARTIFICIAL CLOUDS**  
Barium release system  
[NASA-CASE-LAR-10670-1] c 06 N73-30097
- ARTIFICIAL GRAVITY**  
Rotating space station simulator Patent  
[NASA-CASE-XLA-03127] c 11 N71-10776  
Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881  
Space vehicle with artificial gravity and earth-like environment  
[NASA-CASE-LEW-11101-1] c 31 N73-32750
- ARTIFICIAL INTELLIGENCE**  
Tactile sensing system — manipulator controllers  
[NASA-CASE-NPO-15094-1] c 33 N81-16386
- ARTIFICIAL SATELLITES**  
Gravity gradient attitude control system Patent  
[NASA-CASE-GSC-10555-1] c 21 N71-27324
- ASBESTOS**  
Reconstituted asbestos matrix — for use in fuel or electrolysis cells  
[NASA-CASE-MS-C-12568-1] c 24 N76-14204
- ASPECT RATIO**  
Variable sweep wing aircraft Patent  
[NASA-CASE-XLA-00221] c 02 N70-33266  
Variable-span aircraft Patent  
[NASA-CASE-XLA-00166] c 02 N70-34178  
Variable sweep aircraft wing Patent  
[NASA-CASE-XLA-00350] c 02 N70-38011
- ASPHALT**  
Thermoplastic rubber comprising ethylene-vinyl acetate copolymer, asphalt and fluxing oil  
[NASA-CASE-NPO-08835-1] c 27 N78-33228
- ASSAYING**  
Rapid, quantitative determination of bacteria in water  
[NASA-CASE-GSC-12158-1] c 51 N78-22585
- ASSEMBLIES**  
Multiple Belleville spring assembly Patent  
[NASA-CASE-XNP-00840] c 15 N70-38225  
Bearing seat usable in a gas turbine engine  
[NASA-CASE-LEW-12477-1] c 37 N77-32501  
Foldable beam  
[NASA-CASE-LAR-12077-1] c 31 N81-25259  
Unitary seal ring assembly — cryogenic applications  
[NASA-CASE-MFS-25678-1] c 37 N82-25517
- ASTRONAUT LOCOMOTION**  
Rotating space station simulator Patent  
[NASA-CASE-XLA-03127] c 11 N71-10776  
Space suit pressure stabilizer Patent  
[NASA-CASE-XLA-05332] c 05 N71-11194  
Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11195  
Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161  
Foreshortened convolute section for a pressurized suit Patent  
[NASA-CASE-XMS-09637-1] c 05 N71-24730  
Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619  
Walking boot assembly  
[NASA-CASE-ARC-11101-1] c 54 N78-17675  
Spacesuit mobility knee joints  
[NASA-CASE-ARC-11058-2] c 54 N79-24651
- ASTRONAUT MANEUVERING EQUIPMENT**  
Hand-held self-maneuvering unit Patent  
[NASA-CASE-XMS-05304] c 05 N71-12336  
Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c 11 N71-18773  
Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c 28 N71-27585
- ASTRONAUT PERFORMANCE**  
Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619  
Spacesuit mobility joints  
[NASA-CASE-ARC-11058-1] c 54 N78-31735
- ASTRONAUT TRAINING**  
Training vehicle for controlling attitude Patent  
[NASA-CASE-XMS-02977] c 11 N71-10746  
Mechanical simulator of low gravity conditions Patent  
[NASA-CASE-MFS-10555] c 11 N71-19494  
Subgravity simulator Patent  
[NASA-CASE-XMS-04798] c 11 N71-21474
- ASTRONAUTS**  
Emergency lunar communications system  
[NASA-CASE-MFS-21042] c 07 N72-25171  
Manual actuator — for spacecraft exercising machines  
[NASA-CASE-MFS-21481-1] c 37 N74-18127
- ASTRONAVIGATION**  
Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c 14 N71-15621
- ASTRONOMICAL PHOTOGRAPHY**  
Apparatus for photographing meteors  
[NASA-CASE-LAR-10226-1] c 14 N73-19419
- ASTRONOMICAL TELESCOPES**  
Solar optical telescope dome control system Patent  
[NASA-CASE-MS-C-10966] c 14 N71-19568  
Method and apparatus for aligning a laser beam projector Patent  
[NASA-CASE-NPO-11087] c 23 N71-29125  
Star image motion compensator  
[NASA-CASE-LAR-10523-1] c 14 N72-22444  
Anastigmatic three-mirror telescope  
[NASA-CASE-MFS-23675-1] c 89 N79-10969
- ASYMMETRY**  
Asymmetric polyimide separation membrane and method  
[NASA-CASE-NPO-15431-1] c 25 N81-29178  
Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 27 N82-28444
- ATMOSPHERIC COMPOSITION**  
Atmospheric sampling devices  
[NASA-CASE-NPO-11373] c 13 N72-25323  
Apparatus for sampling particulates in gases  
[NASA-CASE-HQN-10037-1] c 14 N73-27376  
Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c 35 N74-11284  
Chelate-modified polymers for atmospheric gas chromatography  
[NASA-CASE-ARC-11154-1] c 25 N80-23383  
Mobile sampler for use in acquiring samples of terrestrial atmospheric gases  
[NASA-CASE-NPO-15220-1] c 35 N81-24414
- ATMOSPHERIC ENTRY**  
Flight craft Patent  
[NASA-CASE-XAC-02058] c 02 N71-16087  
Means for measuring the electron density gradients of the plasma sheath formed around a space vehicle Patent  
[NASA-CASE-XLA-06232] c 25 N71-20563  
Orbital and entry tracking accessory for globes — to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015
- ATMOSPHERIC ENTRY SIMULATION**  
Plasma accelerator Patent  
[NASA-CASE-XLA-00675] c 25 N70-33267  
Flow field simulation Patent  
[NASA-CASE-LAR-11138] c 12 N71-20436
- ATMOSPHERIC PHYSICS**  
Rocket borne instrument to measure electric fields inside electrified clouds  
[NASA-CASE-KSC-10730-1] c 14 N73-32318
- ATMOSPHERIC PRESSURE**  
Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229
- ATMOSPHERIC RADIATION**  
Method and apparatus for measuring solar activity and atmospheric radiation effects  
[NASA-CASE-ERC-10276] c 14 N73-26432
- ATMOSPHERIC REFRACTION**  
Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-1] c 36 N81-22344
- ATMOSPHERIC SCATTERING**  
Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028
- ATMOSPHERIC SOUNDING**  
Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 46 N82-12685  
Method of an apparatus for measuring temperature and pressure — remote sensing of the atmosphere  
[NASA-CASE-GSC-12558-1] c 35 N82-29580
- ATMOSPHERIC TURBULENCE**  
Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c 20 N71-16340  
Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493
- ATOMIC EXCITATIONS**  
Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 72 N82-24953
- ATOMIZERS**  
Cryogenic cooling system Patent  
[NASA-CASE-NPO-10467] c 23 N71-26654
- Improved constant-output atomizer  
[NASA-CASE-MFS-25631-1] c 34 N82-10360
- ATS**  
Doppler frequency spread correction device for multiplex transmissions  
[NASA-CASE-XGS-02749] c 07 N69-39978
- ATTACHMENT**  
Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c 09 N73-27150
- ATTENUATORS**  
Rotary vane attenuator wherein rotor has orthogonally disposed resistive and dielectric cards  
[NASA-CASE-NPO-11418-1] c 14 N73-13420  
Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969
- ATTITUDE (INCLINATION)**  
Analog spatial maneuver computer  
[NASA-CASE-GSC-10880-1] c 08 N72-11172  
Spacecraft attitude sensor  
[NASA-CASE-GSC-10890-1] c 21 N73-30640  
Interferometer mirror tilt correcting system  
[NASA-CASE-NPO-13687-1] c 35 N78-18391
- ATTITUDE CONTROL**  
Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c 31 N69-27499  
Three axis controller Patent  
[NASA-CASE-XFR-00181] c 21 N70-33279  
Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent  
[NASA-CASE-XGS-00466] c 21 N70-34297  
Attitude and propellant flow control system and method Patent  
[NASA-CASE-XMF-00185] c 21 N70-34539  
Space vehicle attitude control Patent  
[NASA-CASE-XNP-00465] c 21 N70-35395  
Attitude control for spacecraft Patent  
[NASA-CASE-XNP-00294] c 21 N70-36938  
Attitude orientation of spin-stabilized space vehicles Patent  
[NASA-CASE-XLA-00281] c 21 N70-36943  
Ejection unit Patent  
[NASA-CASE-XNP-00676] c 15 N70-38996  
Three-axis controller Patent  
[NASA-CASE-XAC-01404] c 05 N70-41581  
Training vehicle for controlling attitude Patent  
[NASA-CASE-XMS-02977] c 11 N71-10746  
Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-03914] c 21 N71-10771  
Automatic balancing device Patent  
[NASA-CASE-LAR-10774] c 10 N71-13545  
Spacecraft experiment pointing and attitude control system Patent  
[NASA-CASE-XLA-05464] c 21 N71-14132  
Attitude control system Patent  
[NASA-CASE-XGS-04393] c 21 N71-14159  
Control system for rocket vehicles Patent  
[NASA-CASE-XLA-01163] c 21 N71-15582  
Reactance control system Patent  
[NASA-CASE-XMF-01598] c 21 N71-15583  
Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c 21 N71-15642  
Three-axis finger tip controller for switches Patent  
[NASA-CASE-XAC-02405] c 09 N71-16089  
Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629  
Attitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880  
Attitude control system for sounding rockets Patent  
[NASA-CASE-XGS-01654] c 31 N71-24750  
Voice operated controller Patent  
[NASA-CASE-XLA-04063] c 31 N71-33160  
Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089  
Temperature compensated digital inertial sensor — circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c 35 N74-15094  
Sun direction detection system  
[NASA-CASE-NPO-13722-1] c 74 N77-22951  
Thrust augmented spin recovery device  
[NASA-CASE-LAR-11970-2] c 08 N81-19130
- ATTITUDE GYROS**  
Space vehicle attitude control Patent  
[NASA-CASE-XNP-00465] c 21 N70-35395  
Attitude control system  
[NASA-CASE-MFS-22787-1] c 15 N77-10113
- ATTITUDE INDICATORS**  
Photosensitive device to detect bearing deviation Patent  
[NASA-CASE-XNP-00438] c 21 N70-35089  
Controllers Patent  
[NASA-CASE-XMS-07487] c 15 N71-23255



Combined optical attitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268  
Head-up attitude display  
[NASA-CASE-ERC-10392] c 21 N73-14692  
Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089  
Translatory shock absorber for attitude sensors  
[NASA-CASE-MFS-22905-1] c 19 N76-22284  
Air speed and attitude probe  
[NASA-CASE-FRC-11009-1] c 06 N80-18036  
Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N81-22048

**ATTITUDE STABILITY**

Dynamic precession damper for spin stabilized vehicles Patent  
[NASA-CASE-XLA-01989] c 21 N70-34295  
Apparatus for automatically stabilizing the attitude of a nonguided vehicle  
[NASA-CASE-ARC-10134] c 30 N72-17873  
Method of and apparatus for damping nutation motion with minimum spin axis attitude disturbance  
[NASA-CASE-GSC-12551-1] c 18 N81-12156

**AUDIO EQUIPMENT**

Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244

**AUDIO FREQUENCIES**

Signal path series step biased multidevice high efficiency amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430  
Audio frequency marker system  
[NASA-CASE-NPO-11147] c 14 N72-27408

**AUDITORY DEFECTS**

Hearing aid malfunction detection system  
[NASA-CASE-MSC-14916-1] c 33 N78-10375

**AUDITORY PERCEPTION**

Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c 71 N74-21014

**AUDITORY SIGNALS**

Audio signal processor Patent  
[NASA-CASE-MSC-12223-1] c 07 N71-26181  
Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244

**AUDITORY STIMULI**

Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c 71 N74-21014

**AUGER EFFECT**

Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MSC-18791-1] c 37 N81-24446

**AUSTENITIC STAINLESS STEELS**

Nickel aluminate coated low alloy stainless steel  
[NASA-CASE-LEW-11267-1] c 17 N73-32414  
Device for measuring the ferrite content in an austenitic stainless-steel weld  
[NASA-CASE-MFS-22907-1] c 26 N76-18257

**AUTOCALVES**

System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724

**AUTOCORRELATION**

Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503  
Correlation function apparatus Patent  
[NASA-CASE-XNP-00746] c 07 N71-21476  
An electro-optical Doppler tracker means and method for optical correlation of synthetic aperture radar data  
[NASA-CASE-NPO-14998-1] c 33 N81-15194

**AUTOMATIC CONTROL**

Bus voltage compensation circuit for controlling direct current motor  
[NASA-CASE-XMS-04215-1] c 09 N69-39987  
Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955  
Pulsed energy power system Patent  
[NASA-CASE-MSC-13112] c 03 N71-11057  
Automatic balancing device Patent  
[NASA-CASE-LAR-10774] c 10 N71-13545  
Apparatus for welding torch angle and seam tracking control Patent  
[NASA-CASE-XMF-03287] c 15 N71-15607  
Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573  
Solar optical telescope dome control system Patent  
[NASA-CASE-MSC-10966] c 14 N71-19568  
Automatic welding speed controller Patent  
[NASA-CASE-XMF-01730] c 15 N71-23050  
Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c 09 N71-23548  
Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042  
Automatic fatigue test temperature programmer Patent  
[NASA-CASE-XLA-02059] c 33 N71-24276  
Automatic battery charger Patent  
[NASA-CASE-XNP-04758] c 03 N71-24605

Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMF-05195] c 10 N71-24861

Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent  
[NASA-CASE-NPO-10625] c 09 N71-26182

Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c 14 N71-26244

Automated fluid chemical analyzer Patent  
[NASA-CASE-XNP-09451] c 06 N71-26754

Automatic control of liquid cooling garment by cutaneous and external auditory meatus temperatures  
[NASA-CASE-MSC-13917-1] c 05 N72-15098

Optimal control system for an electric motor driven vehicle  
[NASA-CASE-NPO-11210] c 11 N72-20244

Automated equipotential plotter  
[NASA-CASE-NPO-11134] c 09 N72-21246

Ion thruster magnetic field control  
[NASA-CASE-LEW-10835-1] c 28 N72-22771

Temperature controller for a fluid cooled garment  
[NASA-CASE-ARC-10599-1] c 05 N73-26071

Redundant speed control for brushless Hall effect motor  
[NASA-CASE-MFS-20207-1] c 09 N73-32107

Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c 52 N74-22771

Automatically operable self-leveling load table  
[NASA-CASE-MFS-22039-1] c 09 N75-12968

Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014

Traffic survey system — using optical scanners  
[NASA-CASE-MFS-22631-1] c 66 N76-19888

Automatic visual inspection system for microelectronics  
[NASA-CASE-NPO-13282] c 38 N78-17396

Automatic fluid dispenser  
[NASA-CASE-ARC-10820-1] c 35 N78-19466

Method for producing solar energy panels by automation  
[NASA-CASE-LEW-12541-1] c 44 N78-25529

Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257

Method for forming a solar array strip  
[NASA-CASE-NPO-13652-3] c 44 N80-14474

Automatic thermal switch  
[NASA-CASE-GSC-12553-1] c 33 N80-21671

Method of growing a ribbon crystal particularly suited for facilitating automated control of ribbon width  
[NASA-CASE-NPO-14295-1] c 76 N80-32245

Integrated control system for a gas turbine engine  
[NASA-CASE-LEW-12594-2] c 07 N81-19116

Variable speed drive  
[NASA-CASE-GSC-12643-1] c 37 N81-24447

Programmable scan/read circuitry for charge coupled device imaging detectors — for a startracker  
[NASA-CASE-NPO-15345-1] c 33 N81-27403

Solar energy control system — temperature measurement  
[NASA-CASE-MFS-25287-1] c 44 N82-18686

Control system for an induction motor with energy recovery  
[NASA-CASE-MFS-25477-1] c 33 N82-22437

Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205

Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 44 N82-29713

**AUTOMATIC CONTROL VALVES**

Check valve assembly for a probe Patent  
[NASA-CASE-XLA-00128] c 15 N70-37925

Metal valve pindle with encapsulated elastomeric body Patent  
[NASA-CASE-MSC-12116-1] c 15 N71-17648

Semitoroidal diaphragm cavitating valve Patent  
[NASA-CASE-XNP-09704] c 12 N71-18615

Valving device for automatic refilling in cryogenic liquid systems  
[NASA-CASE-NPO-11177] c 15 N72-17453

Combined pressure regulator and shutoff valve  
[NASA-CASE-NPO-13201-1] c 37 N75-15050

Iodine generator for reclaimed water purification  
[NASA-CASE-MSC-14632-1] c 54 N78-14784

Automatic compression adjusting mechanism for internal combustion engines  
[NASA-CASE-MSC-18807-1] c 37 N81-29442

**AUTOMATIC FREQUENCY CONTROL**  
Automatic acquisition system for phase-lock loop  
[NASA-CASE-XGS-04994] c 09 N69-21543

Audio signal processor Patent  
[NASA-CASE-MSC-12223-1] c 07 N71-26181

Automatic frequency control loop including synchronous switching circuits  
[NASA-CASE-KSC-10393] c 09 N72-21247

Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c 09 N73-20231

**AUTOMATIC GAIN CONTROL**

Automatic gain control system  
[NASA-CASE-XMS-05307] c 09 N69-24330

Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986

Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c 09 N73-20231

Digital automatic gain amplifier  
[NASA-CASE-KSC-11008-1] c 33 N79-22373

Automatic level control circuit  
[NASA-CASE-KSC-11170-1] c 33 N81-29347

**AUTOMATIC TEST EQUIPMENT**

Visual examination apparatus  
[NASA-CASE-ARC-10329-1] c 05 N73-26072

Automatic microbial transfer device  
[NASA-CASE-LAR-11354-1] c 35 N75-27330

Visual examination apparatus  
[US-PATENT-RE-28,921] c 52 N76-30793

Automated clinical system for chromosome analysis  
[NASA-CASE-NPO-13913-1] c 52 N79-12694

Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402

Pressure suit joint analyzer  
[NASA-CASE-ARC-11314-1] c 54 N82-26987

**AUTOMATION**

Automated multi-level vehicle parking system  
[NASA-CASE-NPO-13058-1] c 37 N77-22480

**AUTOMOBILE ENGINES**

Automotive gas turbine fuel control  
[NASA-CASE-LEW-12785-1] c 37 N78-24545

Controller for computer control of brushless dc motors — automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352

**AUTOMOBILE FUELS**

Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-2] c 44 N76-29700

**AUTOMOBILES**

Fiberglass/epoxy composite automotive door structure including a glass-reinforced intrusion strip  
[NASA-CASE-NPO-15057-1] c 24 N81-19230

**AUXILIARY POWER SOURCES**

Independent power generator  
[NASA-CASE-LAR-11208-1] c 44 N78-32539

**AXES (REFERENCE LINES)**

Moment of inertia test fixture Patent  
[NASA-CASE-XGS-01023] c 14 N71-22992

Universal restrainer and joint Patent  
[NASA-CASE-NPO-02278] c 15 N71-28951

Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 32 N82-10287

**AXES OF ROTATION**

Three axis controller Patent  
[NASA-CASE-XFR-00181] c 21 N70-33279

Proportional controller Patent  
[NASA-CASE-XAC-03392] c 03 N70-41954

Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688

Controllers Patent  
[NASA-CASE-XMS-07487] c 15 N71-23255

**AXIAL COMPRESSION LOADS**

Impact monitoring apparatus  
[NASA-CASE-MSC-15626-1] c 14 N72-25411

Compression test fixture  
[NASA-CASE-MSC-18723-1] c 39 N81-24470

**AXIAL FLOW TURBINES**

Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00170] c 15 N70-36412

Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00085] c 28 N70-39895

Method and turbine for extracting kinetic energy from a stream of two-phase fluid  
[NASA-CASE-NPO-14130-1] c 34 N79-20335

**AXIAL LOADS**

Locking device with rolling detents Patent  
[NASA-CASE-XMF-01371] c 15 N70-41829

Method for measuring biaxial stress in a body subjected to stress inducing loads  
[NASA-CASE-MFS-23299-1] c 39 N77-28511

**AXIAL STRESS**

Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c 37 N76-18459

Method for measuring biaxial stress in a body subjected to stress inducing loads  
[NASA-CASE-MFS-23299-1] c 39 N77-28511

**AZIMUTH**

Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c 14 N71-26627

Long range laser traversing system  
[NASA-CASE-GSC-11262-1] c 36 N74-21091



- Magnetic heading reference  
[NASA-CASE-LAR-11387-2] c 04 N77-19056
- Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N80-32607
- A pipelined digital SAR azimuth correlator using hybrid FFT/transversal filter  
[NASA-CASE-NPO-15519-1] c 32 N82-12298

**AZINES**

- Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c 06 N71-11242
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N76-32315
- Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307
- Perfluoroalkyl polytriazines containing pendent iododifluoromethyl groups  
[NASA-CASE-NPO-11241-1] c 25 N81-14016
- Process for the preparation of fluorine containing crosslinked elastomeric polytriazine and product so produced  
[NASA-CASE-ARC-11248-1] c 27 N81-17259
- Improved process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N82-26462

**AZO COMPOUNDS**

- Molding process for imidazopyrrolone polymers  
[NASA-CASE-LAR-10547-1] c 31 N74-13177

**B****BACK INJURIES**

- Spine immobilization apparatus  
[NASA-CASE-ARC-11167-1] c 52 N81-25662

**BACKGROUND NOISE**

- Electronic background suppression method and apparatus for a field scanning sensor  
[NASA-CASE-XGS-05211] c 07 N69-39980

**BACKGROUND RADIATION**

- Method and apparatus for background signal reduction in opto-acoustic absorption measurement  
[NASA-CASE-NPO-13683-1] c 35 N77-14411

**BACKSCATTERING**

- Method and apparatus for determining electromagnetic characteristics of large surface area passive reflectors Patent  
[NASA-CASE-XGS-02608] c 07 N70-41678
- Mossbauer spectrometer radiation detector  
[NASA-CASE-LAR-11155-1] c 35 N74-15091

**BACKUPS**

- Flexible back-up bar Patent  
[NASA-CASE-XMF-00722] c 15 N70-40204
- Inherent redundancy electric heater  
[NASA-CASE-MFS-21462-1] c 33 N74-14935

**BACKWARD WAVES**

- Ladder supported ring bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N81-24348

**BACTERIA**

- Decontamination of petroleum products Patent  
[NASA-CASE-XNP-03835] c 06 N71-23499
- Bacterial contamination monitor  
[NASA-CASE-GSC-10879-1] c 14 N72-25413
- Method of detecting and counting bacteria in body fluids  
[NASA-CASE-GSC-11092-2] c 04 N73-27052
- Lyophilized spore dispenser  
[NASA-CASE-LAR-10544-1] c 37 N74-13178
- Method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c 51 N76-29891
- Rapid, quantitative determination of bacteria in water  
[NASA-CASE-GSC-12158-1] c 51 N78-22585
- Determination of antimicrobial susceptibilities on infected unnes without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750
- Method and apparatus for eliminating luminol interference material  
[NASA-CASE-MSC-16260-1] c 51 N80-16714

**BACTERIOLOGY**

- Bacteria detection instrument and method  
[NASA-CASE-GSC-11533-1] c 14 N73-13435
- Application of luciferase assay for ATP to antimicrobial drug susceptibility  
[NASA-CASE-GSC-12039-1] c 51 N77-22794
- Automated single-slide staining device  
[NASA-CASE-LAR-11649-1] c 51 N77-27677

**BAFFLES**

- Light radiation direction indicator with a baffle of two parallel grids  
[NASA-CASE-XNP-03930] c 14 N69-24331

**Anti-glare improvement for optical imaging systems**

- Patent  
[NASA-CASE-NPO-10337] c 14 N71-15604
- Flexible ring slosh damping baffle Patent  
[NASA-CASE-LAR-10317-1] c 32 N71-16103
- Buoyant anti-slosh system Patent  
[NASA-CASE-XLA-04605] c 32 N71-16106
- Floating baffle to improve efficiency of liquid transfer from tanks  
[NASA-CASE-KSC-10639] c 15 N73-26472
- System for the measurement of ultra-low stray light levels --- determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865

**BAGS**

- Relief container  
[NASA-CASE-XMS-06761] c 05 N69-23192
- Gas diffusion liquid storage bag and method of use for storing blood  
[NASA-CASE-NPO-13930-1] c 52 N79-14749

**BAKING**

- Bakeable McLeod gauge  
[NASA-CASE-XGS-01293-1] c 35 N79-33450
- A method and technique for installing light-weight fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-18934-3] c 24 N82-26387

**BALANCE**

- Thermo-protective device for balances Patent  
[NASA-CASE-XAC-00648] c 14 N70-40400
- Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c 35 N74-26945

**BALANCING**

- Automatic balancing device Patent  
[NASA-CASE-LAR-10774] c 10 N71-13545
- Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c 15 N71-27432
- Lift balancing device  
[NASA-CASE-LAR-10348-1] c 11 N73-12264

**BALL BEARINGS**

- Two component bearing Patent  
[NASA-CASE-XLA-00013] c 15 N71-29136
- High speed rolling element bearing  
[NASA-CASE-LEW-10856-1] c 15 N72-22490
- Low mass rolling element for bearings  
[NASA-CASE-LEW-11087-1] c 15 N73-30458
- Hollow rolling element bearings  
[NASA-CASE-LEW-11087-3] c 37 N74-21064
- Drilled ball bearing with a one piece anti-tipping cage assembly  
[NASA-CASE-LEW-11925-1] c 37 N75-31446
- Spherical bearing --- to reduce vibration effects  
[NASA-CASE-MFS-23447-1] c 37 N79-11404

**BALLAST (MASS)**

- Life raft stabilizer  
[NASA-CASE-MSC-12393-1] c 02 N73-26006

**BALLASTS (IMPEDANCES)**

- Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c 09 N69-24318
- Direct current ballast circuit for metal halide lamp  
[NASA-CASE-MSC-18407-1] c 33 N82-24427

**BALLISTICS**

- Fiber modified polyurethane foam for ballistic protection  
[NASA-CASE-ARC-10714-1] c 27 N76-15310
- BALLOON SOUNDING**
- Apparatus for controlling the temperature of balloon-borne equipment  
[NASA-CASE-GSC-11620-1] c 34 N74-23039

**BALLOONS**

- Hot air balloon deceleration and recovery system Patent  
[NASA-CASE-XLA-06824-2] c 02 N71-11037
- Inflation system for balloon type satellites Patent  
[NASA-CASE-XGS-03351] c 31 N71-16081
- System for stabilizing torque between a balloon and gondola  
[NASA-CASE-GSC-11077-1] c 02 N73-13008

**BALLS**

- Two-axis controller Patent  
[NASA-CASE-XFR-04104] c 03 N70-42073
- Quartz ball valve  
[NASA-CASE-NPO-14473-1] c 37 N80-23654

**BANDPASS FILTERS**

- Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c 07 N69-24323
- Compensating bandwidth switching transients in an amplifier circuit Patent  
[NASA-CASE-XNP-01107] c 10 N71-28859
- Signal-to-noise ratio determination circuit  
[NASA-CASE-GSC-11239-1] c 10 N73-25241
- High-Q bandpass resonators utilizing bandstop resonator pairs  
[NASA-CASE-GSC-10990-1] c 09 N73-26195
- Dichroic plate --- as bandpass filters  
[NASA-CASE-NPO-13506-1] c 35 N76-15435

**Notch filter**

- [NASA-CASE-MFS-23303-1] c 32 N77-18307
- Adaptive polarization separation  
[NASA-CASE-LAR-12196-1] c 33 N81-26358
- Tuned analog network --- bandpass filter networks  
[NASA-CASE-GSC-12650-1] c 33 N82-10324
- Smoothing filter for digital to analog conversion  
[NASA-CASE-FRC-11025-1] c 33 N82-24417

**BANDWIDTH**

- Narrow bandwidth video Patent  
[NASA-CASE-XMS-06740-1] c 07 N71-26579
- Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c 09 N73-20231
- Turnstile and flared cone UHF antenna  
[NASA-CASE-LAR-10970-1] c 33 N76-14372
- Independent gain and bandwidth control of a traveling wave maser  
[NASA-CASE-NPO-13801-1] c 36 N78-18410
- Inductorless narrow-band filter/amplifier  
[NASA-CASE-GSC-12410-1] c 33 N79-24260
- Dual band combiner for horn antenna  
[NASA-CASE-NPO-14519-1] c 32 N80-23524

**BARIUM**

- Barium release system  
[NASA-CASE-LAR-10670-1] c 06 N73-30097

**BARIUM COMPOUNDS**

- Ion thruster cathode  
[NASA-CASE-XLE-07087] c 06 N69-39889

**BARIUM FLUORIDES**

- Method of making self lubricating fluoride-metal composite materials Patent  
[NASA-CASE-XLE-08511-2] c 18 N71-16105

**BARIUM ION CLOUDS**

- Rocket having barium release system to create ion clouds in the upper atmosphere  
[NASA-CASE-LAR-10670-2] c 15 N74-27360

**BARIUM TITANATES**

- Semiconductor-ferroelectric memory device  
[NASA-CASE-ERC-10307] c 08 N72-21198

**BARRIER LAYERS**

- Schottky barrier solar cell  
[NASA-CASE-NPO-13689-2] c 44 N81-29525

**BARRIERS**

- Short range laser obstacle detector --- for surface vehicles using laser diode array  
[NASA-CASE-NPO-11856-1] c 36 N74-15145

**BARS**

- Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N81-24164

**BASES (CHEMICAL)**

- Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047

**BATTERY CHARGERS**

- Method and apparatus for battery charge control Patent  
[NASA-CASE-XGS-05432] c 03 N71-19438
- Electrochemical coulometer and method of forming same Patent  
[NASA-CASE-XGS-05434] c 03 N71-20491
- Coulometer and third electrode battery charging circuit Patent  
[NASA-CASE-GSC-10487-1] c 03 N71-24719
- Method and apparatus for conditioning of nickel-cadmium batteries  
[NASA-CASE-MFS-23270-1] c 44 N78-25531

**BAYARD-ALPERT IONIZATION GAGES**

- Ionization vacuum gauge with all but the end of the ion collector shielded Patent  
[NASA-CASE-XLA-07424] c 14 N71-18482

**BEADS**

- Rotary bead dropper and selector for testing micrometeorite detectors Patent  
[NASA-CASE-XGS-03304] c 09 N71-22988

**BEAM LEADS**

- Integrated circuit package with lead structure and method of preparing the same  
[NASA-CASE-MFS-21374-1] c 33 N74-12951

**BEAM SPLITTERS**

- Optical range finder having nonoverlapping complete images  
[NASA-CASE-MSC-12105-1] c 14 N72-21409
- Laser extensometer  
[NASA-CASE-MFS-19259-1] c 36 N78-14380
- Over-under double-pass interferometer  
[NASA-CASE-NPO-13999-1] c 35 N78-18395
- Method and apparatus for splitting a beam of energy --- optical communication  
[NASA-CASE-GSC-12083-1] c 73 N78-32848
- Interferometer  
[NASA-CASE-NPO-14502-1] c 74 N81-17888
- Dual-beam skin friction interferometer --- portable equipment  
[NASA-CASE-ARC-11354-1] c 36 N81-29415
- High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N82-24973



## BEAM SWITCHING

- Electronic beam switching commutator Patent  
[NASA-CASE-XGS-01451] c 09 N71-10677
- Antenna array at focal plane of reflector with coupling network for beam switching Patent  
[NASA-CASE-GSC-10220-1] c 07 N71-27233
- Dish antenna having switchable beamwidth --- with truncated concave ellipsoid subreflector  
[NASA-CASE-GSC-11760-1] c 33 N75-19516
- Single frequency, two feed dish antenna having switchable beamwidth  
[NASA-CASE-GSC-11968-1] c 32 N76-15329
- Switchable beamwidth monopulse method and system  
[NASA-CASE-GSC-11924-1] c 33 N76-27472

## BEAM WAVEGUIDES

- Laser machining apparatus Patent  
[NASA-CASE-HQN-10541-2] c 15 N71-27135
- Optical frequency waveguide and transmission system Patent  
[NASA-CASE-HQN-10541-4] c 16 N71-27183
- Method and apparatus for aligning a laser beam projector Patent  
[NASA-CASE-NPO-11087] c 23 N71-29125
- Microwave power transmission beam safety system  
[NASA-CASE-NPO-14224-1] c 33 N80-18287

## BEAMS (RADIATION)

- Method and means for recording and reconstructing holograms without use of a reference beam Patent  
[NASA-CASE-ERC-10020] c 16 N71-26154
- Optical frequency waveguide and transmission system  
[NASA-CASE-HQN-10541-3] c 23 N72-23695
- Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510
- Scannable beam forming interferometer antenna array system  
[NASA-CASE-GSC-12365-1] c 32 N80-28578
- Collimated beam manifold and method for using the same --- laser beams  
[NASA-CASE-MFS-25312-1] c 74 N80-34251
- Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N81-12407
- Sidelooking laser altimeter for a flight simulator  
[NASA-CASE-ARC-11312-1] c 36 N81-19439
- Method for shaping and aiming narrow beams --- sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443
- Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072

## BEAMS (SUPPORTS)

- Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N81-12283
- Foldable beam  
[NASA-CASE-LAR-12077-1] c 31 N81-25259

## BEARING (DIRECTION)

- Light radiation direction indicator with a baffle of two parallel gnds  
[NASA-CASE-XNP-03930] c 14 N69-24331
- Radiation direction detector including means for compensating for photocell aging Patent  
[NASA-CASE-XLA-00183] c 14 N70-40239
- Interferometer direction sensor Patent  
[NASA-CASE-NPO-10320] c 14 N71-17655
- Omnidirectional acceleration device Patent  
[NASA-CASE-HQN-10780] c 14 N71-30265
- Magnetic heading reference  
[NASA-CASE-LAR-11387-2] c 04 N77-19056
- Direction sensitive laser velocimeter --- determining the direction of particles using a helium-neon laser  
[NASA-CASE-LAR-12177-1] c 36 N81-24422
- System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
[NASA-CASE-FRC-11005-1] c 06 N82-16075

## BEARINGS

- Alloys for bearings Patent  
[NASA-CASE-XLE-05033] c 15 N71-23810
- Bearing and gimbal lock mechanism and spiral flex lead module Patent  
[NASA-CASE-GSC-10556-1] c 31 N71-26537
- Device for measuring bearing preload  
[NASA-CASE-MFS-20434] c 11 N72-25288
- Magnetic bearing --- for supplying magnetic fluxes  
[NASA-CASE-GSC-11079-1] c 37 N75-18574
- Magnetic bearing system  
[NASA-CASE-GSC-11978-1] c 37 N77-17464
- Hydrostatic bearing support  
[NASA-CASE-LEW-11158-1] c 37 N77-28486
- Deformable bearing seat  
[NASA-CASE-LEW-12527-1] c 37 N77-32500
- Bearing seat usable in a gas turbine engine  
[NASA-CASE-LEW-12477-1] c 37 N77-32501
- Method of making bearing material  
[NASA-CASE-LEW-11930-3] c 24 N80-33482

- Linear magnetic bearings --- active magnetic suspension of armatures  
[NASA-CASE-GSC-12582-1] c 37 N81-16469
- Antenna grout replacement system  
[NASA-CASE-NPO-15205-1] c 37 N81-19457
- Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 33 N81-22279
- Unidirectional flexural pivot  
[NASA-CASE-GSC-12622-1] c 37 N81-22359
- Suspension system for a wheel rolling on a flat track --- bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587
- Magnetic bearing and motor  
[NASA-CASE-GSC-12725-1] c 37 N82-29603

## BEDS (PROCESS ENGINEERING)

- Catalyst bed removing tool Patent  
[NASA-CASE-XFR-00811] c 15 N70-36901

## BEER LAW

- A multichannel photoionization chamber for absorption analysis Patent  
[NASA-CASE-ERC-10044-1] c 14 N71-27090

## BEES

- Decontamination of petroleum products Patent  
[NASA-CASE-XNP-03835] c 06 N71-23499

## BELLINGS

- Balanced bellows spirometer  
[NASA-CASE-XAR-01547] c 05 N69-21473
- Printed circuit board with bellows rivet connection Patent  
[NASA-CASE-XNP-05082] c 15 N70-41960
- Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937
- Internally supported flexible duct joint --- device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c 37 N75-19686

## BELTS

- Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32917

## BENDING

- Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436
- Means for suppressing or attenuating bending motion of elastic bodies Patent  
[NASA-CASE-XAC-05632] c 32 N71-23971
- Technique of elbow bending small jacketed transfer lines Patent  
[NASA-CASE-XNP-10475] c 15 N71-24679
- Forming tool for ribbon or wire  
[NASA-CASE-XLA-05966] c 15 N72-12408

## BENDING DIAGRAMS

- Electrostatic charged particle analyzer having deflection members shaped according to the periodic voltage applied thereto Patent  
[NASA-CASE-XAC-05506-1] c 24 N71-16095

## BENDING FATIGUE

- Apparatus for positioning and loading a test specimen Patent  
[NASA-CASE-XLE-01300] c 15 N70-41993
- Low temperature flexure fatigue cryostat Patent  
[NASA-CASE-XMF-02964] c 14 N71-17659

## BENDING MOMENTS

- Missile launch release system Patent  
[NASA-CASE-XMF-03198] c 30 N70-40353

## BENDING VIBRATION

- Viscous pendulum damper Patent  
[NASA-CASE-LAR-10274-1] c 14 N71-17626

## BENZENE

- Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572

## BERYLLIUM ALLOYS

- Corrosion resistant beryllium Patent  
[NASA-CASE-LEW-10327] c 17 N71-33408
- Thin film strain transducer --- for strain monitoring of high altitude balloons  
[NASA-CASE-WLP-10055-1] c 35 N82-26632

## BERYLLIUM HYDRIDES

- Inhibited solid propellant composition containing beryllium hydride  
[NASA-CASE-NPO-10866-1] c 28 N79-14228

## BERYLLIUM OXIDES

- High temperature beryllium oxide capacitor  
[NASA-CASE-LEW-11938-1] c 33 N76-15373
- High modulus invert analog glass compositions containing beryllia  
[NASA-CASE-HQN-10931-2] c 27 N82-29452
- High modulus rare earth and beryllium containing silicate glass compositions --- for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455

## BIAS

- Electrical self-aligning connector  
[NASA-CASE-MFS-25211-1] c 33 N80-32651

## BIMETALS

- Nonmagnetic thermal motor for a magnetometer  
[NASA-CASE-XAR-03786] c 09 N69-21313

- Thermostatic actuator  
[NASA-CASE-NPO-10637] c 15 N72-12409
- Thermal motor  
[NASA-CASE-NPO-11283] c 09 N72-25260
- Thermal compensating structural member  
[NASA-CASE-MFS-20433] c 15 N72-28496
- Bimetallic fluid displacement apparatus --- for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c 35 N74-15126
- Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c 35 N77-32454

## BINARY CODES

- Time division radio relay synchronizing system using different sync code words for in sync and out of sync conditions Patent  
[NASA-CASE-GSC-10373-1] c 07 N71-19773
- Parallel generation of the check bits of a PN sequence Patent  
[NASA-CASE-XNP-04623] c 10 N71-26103
- Encoder/decoder system for a rapidly synchronizable binary code Patent  
[NASA-CASE-NPO-10342] c 10 N71-33407
- Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11194] c 08 N72-25209
- Binary concatenated coding system  
[NASA-CASE-MSC-14082-1] c 60 N76-23850
- Multiple rate digital command detection system with range clean-up capability  
[NASA-CASE-NPO-13753-1] c 32 N77-20289
- Pseudo noise code and data transmission method and apparatus  
[NASA-CASE-GSC-12017-1] c 32 N77-30308
- Binary to binary coded decimal converter  
[NASA-CASE-GSC-12044-1] c 60 N78-17691
- Apparatus and method for stabilized phase detection for binary signal tracking loops  
[NASA-CASE-MSC-16461-1] c 33 N79-11313

## BINARY DATA

- Binary magnetic memory device Patent  
[NASA-CASE-XGS-00174] c 08 N70-34743
- Ripple add and ripple subtract binary counters Patent  
[NASA-CASE-XGS-04766] c 08 N71-18602
- Computing apparatus Patent  
[NASA-CASE-XGS-04765] c 08 N71-18693
- Digital synchronizer Patent  
[NASA-CASE-NPO-10851] c 07 N71-24613
- Differential phase shift keyed communication system  
[NASA-CASE-MSC-14065-1] c 32 N74-26654
- Modulator for tone and binary signals --- phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981
- Binary to binary coded decimal converter  
[NASA-CASE-GSC-12044-1] c 60 N78-17691

## BINARY DIGITS

- Logarithmic converter Patent  
[NASA-CASE-XLA-00471] c 08 N70-34778
- Full binary adder Patent  
[NASA-CASE-XGS-00689] c 08 N70-34787
- Binary number sorter Patent  
[NASA-CASE-NPO-10112] c 08 N71-12502
- Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c 08 N71-12505
- Display for binary characters Patent  
[NASA-CASE-XGS-04987] c 08 N71-20571
- Comparator for the comparison of two binary numbers Patent  
[NASA-CASE-XNP-04819] c 08 N71-23295
- High speed direct binary to binary coded decimal converter and scaler  
[NASA-CASE-KSC-10595] c 08 N73-12176
- A-mary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c 10 N73-20254
- Binary concatenated coding system  
[NASA-CASE-MSC-14082-1] c 60 N76-23850

## BINARY FLUIDS

- Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c 35 N75-30503

## BINARY TO DECIMAL CONVERTERS

- Binary to binary-coded-decimal converter Patent  
[NASA-CASE-XNP-00432] c 08 N70-35423
- High speed binary to decimal conversion system Patent  
[NASA-CASE-XGS-01230] c 08 N71-19544
- BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890
- High speed direct binary-to-binary coded decimal converter  
[NASA-CASE-KSC-10326] c 08 N72-21197
- Binary to binary coded decimal converter  
[NASA-CASE-GSC-12044-1] c 60 N78-17691

## BINDERS (MATERIALS)

- Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400



- Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125
- Alkali-metal silicate binders and methods of manufacture  
[NASA-CASE-GSC-12303-1] c 24 N79-31347
- BINOCLULARS**  
Binocular device for displaying numerical information in field of view  
[NASA-CASE-LAR-11782-1] c 74 N77-20882
- BIOASSAY**  
Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c 14 N70-41676
- Flavin coenzyme assay  
[NASA-CASE-GSC-10565-1] c 06 N72-25149
- Method of detecting and counting bacteria in body fluids  
[NASA-CASE-GSC-11092-2] c 04 N73-27052
- Amino acid analysis  
[NASA-CASE-NPO-12130-1] c 25 N75-14844
- Servo-controlled intravital microscope system  
[NASA-CASE-NPO-13214-1] c 35 N75-25123
- Method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c 51 N76-29891
- Automated clinical system for chromosome analysis  
[NASA-CASE-NPO-13913-1] c 52 N79-12694
- Determination of antimicrobial susceptibilities on infected unres without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750
- Method and apparatus for eliminating luminol interference material  
[NASA-CASE-MS-16260-1] c 51 N80-16714
- BIODYNAMICS**  
Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772
- Kinesimetric method and apparatus  
[NASA-CASE-MS-18929-1] c 54 N81-15699
- BIOELECTRIC POTENTIAL**  
Electrode for biological recording  
[NASA-CASE-XMS-02872] c 05 N69-21925
- Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MS-90153-2] c 05 N72-25120
- Process for control of cell division  
[NASA-CASE-LAR-10773-3] c 51 N77-25769
- BIOELECTRICITY**  
Plated electrodes Patent  
[NASA-CASE-XMS-04213-1] c 09 N71-26002
- Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698
- BIOENGINEERING**  
Bio-isolated dc operational amplifier --- for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c 33 N74-21851
- Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735
- Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738
- Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772
- Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612
- Urine collection device  
[NASA-CASE-MS-16433-1] c 52 N81-24711
- Biomedical flow sensor --- intravenous procedures  
[NASA-CASE-MS-18761-1] c 52 N81-24717
- Low X-ray absorption aneurysm clips  
[NASA-CASE-LAR-12650-1] c 52 N81-29768
- Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25640-1] c 52 N82-26962
- BIOINSTRUMENTATION**  
Temperature compensated solid state differential amplifier Patent  
[NASA-CASE-XAC-00435] c 09 N70-35440
- Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193
- Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c 05 N71-12346
- EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MS-13282-1] c 05 N71-24729
- Plated electrodes Patent  
[NASA-CASE-XMS-04213-1] c 09 N71-26002
- Ultrasonic biomedical measuring and recording apparatus --- for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10597-1] c 52 N74-20726
- Subminiature insertable force transducer --- including a strain gage to measure forces in muscles  
[NASA-CASE-NPO-13423-1] c 33 N75-31329
- Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c 52 N76-29896
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-1] c 52 N76-33835
- Thermistor holder for skin temperature measurements  
[NASA-CASE-ARC-10855-1] c 52 N77-10780
- Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772
- Corneal seal device  
[NASA-CASE-LEW-12258-1] c 52 N77-28716
- Snap-in compressible biomedical electrode  
[NASA-CASE-MS-14623-1] c 52 N77-28717
- Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580
- Induction powered biological radiosonde  
[NASA-CASE-ARC-11120-1] c 52 N80-18691
- Pulse transducer with artifact signal attenuator --- heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969
- Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MS-16777-1] c 51 N80-27067
- Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072
- Non-invasive method and apparatus for measuring pressure within a pliable vessel  
[NASA-CASE-ARC-11264-1] c 52 N81-33804
- Logic-controlled occlusive cuff system  
[NASA-CASE-MS-14836-1] c 52 N82-11770
- Implantable electrical device  
[NASA-CASE-GSC-12560-1] c 52 N82-29863
- Dual physiological rate measurement instrument  
[NASA-CASE-MS-20078-1] c 52 N82-32971
- BIO-LUMINESCENCE**  
Light detection instrument Patent  
[NASA-CASE-XGS-05534] c 23 N71-16355
- Lyophilized reaction mixtures Patent  
[NASA-CASE-XGS-05532] c 06 N71-17705
- Application of luciferase assay for ATP to antimicrobial drug susceptibility  
[NASA-CASE-GSC-12039-1] c 51 N77-22794
- Rapid, quantitative determination of bacteria in water  
[NASA-CASE-GSC-12158-1] c 51 N78-22585
- BIOMEDICAL DATA**  
Biomedical radiation detecting probe Patent  
[NASA-CASE-XMS-01177] c 05 N71-19440
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-2] c 52 N79-26771
- BIOMETRICS**  
Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c 05 N71-12346
- Compressible biomedical electrode  
[NASA-CASE-MS-13648] c 05 N72-27103
- Ultrasonic biomedical measuring and recording apparatus --- for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10597-1] c 52 N74-20726
- Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c 52 N74-27566
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-1] c 52 N76-33835
- Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-2] c 52 N79-26771
- Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072
- Multifunctional transducer  
[NASA-CASE-NPO-14329-1] c 52 N81-20703
- Sweat collection capsule  
[NASA-CASE-ARC-11031-1] c 52 N81-29763
- Non-invasive method and apparatus for measuring pressure within a pliable vessel  
[NASA-CASE-ARC-11264-1] c 52 N81-33804
- BIOTELEMETRY**  
Telemeter adaptable for implanting in an animal Patent  
[NASA-CASE-XAC-05706] c 05 N71-12342
- Miniature multichannel biotelemetry system  
[NASA-CASE-NPO-13065-1] c 52 N74-26625
- Medical subject monitoring systems --- multichannel monitoring systems  
[NASA-CASE-MS-14180-1] c 52 N76-14757
- Accelerometer telemetry system  
[NASA-CASE-ARC-10849-1] c 17 N76-29347
- Miniature ingestible telemeter devices to measure deep-body temperature  
[NASA-CASE-ARC-10583-1] c 52 N76-29894
- BIPOLAR TRANSISTORS**  
Voltage regulator for battery power source --- using a bipolar transistor  
[NASA-CASE-FRC-10116-1] c 33 N79-23345
- Power converter  
[NASA-CASE-FRC-11014-1] c 33 N82-18494
- BIREFRINGENCE**  
Polarimeter for transient measurement Patent  
[NASA-CASE-XNP-08883] c 23 N71-16101
- BISMUTH**  
Manganese bismuth films with narrow transfer characteristics for Cure-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678
- BISMUTH COMPOUNDS**  
Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c 35 N75-13213
- BISTABLE CIRCUITS**  
AC logic flip-flop circuits Patent  
[NASA-CASE-XGS-00823] c 10 N71-15910
- BIT SYNCHRONIZATION**  
Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333
- Transition tracking bit synchronization system  
[NASA-CASE-NPO-10844] c 07 N72-20140
- Apparatus for deriving synchronizing pulses from pulses in a single channel PCM communications system  
[NASA-CASE-NPO-11302-1] c 07 N73-13149
- Method and apparatus for a single channel digital communications system --- synchronization of received PCM signal by digital correlation with reference signal  
[NASA-CASE-NPO-11302-2] c 32 N74-10132
- BITERNARY CODE**  
Minimal logic block encoder Patent  
[NASA-CASE-NPO-10595] c 10 N71-25917
- BITS**  
Parallel generation of the check bits of a PN sequence Patent  
[NASA-CASE-XNP-04623] c 10 N71-26103
- MOD 2 sequential function generator for multibit binary sequence  
[NASA-CASE-NPO-10636] c 08 N72-25210
- Bit error rate measurement above and below bit rate tracking threshold  
[NASA-CASE-MS-12743-1] c 32 N79-10263
- BLACK BODY RADIATION**  
Black-body furnace Patent  
[NASA-CASE-XLE-01399] c 33 N71-15625
- Cavity radiometer Patent  
[NASA-CASE-XNP-08961] c 14 N71-24809
- Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475
- Black body cavity radiometer Patent  
[NASA-CASE-NPO-10810] c 14 N71-27323
- BLADDER**  
Prosthetic urinary sphincter  
[NASA-CASE-MFS-23717-1] c 52 N81-25660
- BLADE TIPS**  
Modification and improvements to cooled blades Patent  
[NASA-CASE-XLE-00092] c 15 N70-33264
- BLADES**  
Impact absorbing blade mounts for variable pitch blades  
[NASA-CASE-LEW-12313-1] c 37 N78-10468
- BLADES (CUTTERS)**  
Line cutter Patent  
[NASA-CASE-XMS-04072] c 15 N70-42017
- Tissue macerating instrument  
[NASA-CASE-LEW-12668-1] c 52 N78-14773
- Precision reciprocating filament chopper  
[NASA-CASE-LAR-12564-2] c 37 N82-18604
- Crystal cleaving machine  
[NASA-CASE-GSC-12584-1] c 37 N82-32730
- BLAST LOADS**  
Linear explosive comparison  
[NASA-CASE-LAR-10800-1] c 33 N72-27959
- BLOCKS**  
Rotary target V-block --- aligning wind tunnel apparatus for optical measurement  
[NASA-CASE-LAR-12007-2] c 74 N79-25876
- BLOOD**  
Reduction of blood serum cholesterol  
[NASA-CASE-NPO-12119-1] c 52 N75-15270
- Gas diffusion liquid storage bag and method of use for storing blood  
[NASA-CASE-NPO-13930-1] c 52 N79-14749
- Dialysis system --- using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687
- BLOOD FLOW**  
Logic-controlled occlusive cuff system  
[NASA-CASE-MS-14836-1] c 52 N82-11770
- BLOOD PRESSURE**  
Blood pressure measuring system for separating and separately recording dc signal and an ac signal Patent  
[NASA-CASE-XMS-06061] c 05 N71-23317
- Apparatus and method for processing Korotkov sounds --- for blood pressure measurement  
[NASA-CASE-MS-13999-1] c 52 N74-26626
- Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c 52 N74-27566



Circuit for detecting initial systole and diastolic notch — for monitoring arterial pressure  
[NASA-CASE-LEW-11581-1] c 54 N75-13531

Non-invasive method and apparatus for measuring pressure within a pliable vessel  
[NASA-CASE-ARC-11264-1] c 52 N81-33804

**BLOOD VESSELS**

Non-invasive method and apparatus for measuring pressure within a pliable vessel  
[NASA-CASE-ARC-11264-1] c 52 N81-33804

**BLUFF BODIES**

Annular supersonic decelerator or drogue Patent  
[NASA-CASE-XLE-00222] c 02 N70-37939

**BLUNT BODIES**

Flow field simulation Patent  
[NASA-CASE-LAR-11138] c 12 N71-20436

**BODIES OF REVOLUTION**

Conforming polisher for aspheric surface of revolution Patent  
[NASA-CASE-XGS-02884] c 15 N71-22705

Moment of inertia test fixture Patent  
[NASA-CASE-XGS-01023] c 14 N71-22992

**BODY FLUIDS**

Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c 52 N74-22771

Method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c 51 N76-29891

Micro-fluid exchange coupling apparatus  
[NASA-CASE-ARC-11114-1] c 51 N81-14605

**BODY KINEMATICS**

Space suit having improved waist and torso movement  
[NASA-CASE-ARC-10275-1] c 05 N72-22092

Controller arm for a remotely related slave arm  
[NASA-CASE-ARC-11052-1] c 37 N79-28551

Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 54 N81-15699

**BODY MEASUREMENT (BIOLOGY)**

Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-1] c 52 N76-33835

Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580

Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 54 N81-15699

Apparatus for determining changes in limb volume  
[NASA-CASE-MSC-18759-1] c 52 N81-24716

**BODY TEMPERATURE**

Garments for controlling the temperature of the body Patent  
[NASA-CASE-XMS-10269] c 05 N71-24147

Miniature ingestible telemeter devices to measure deep-body temperature  
[NASA-CASE-ARC-10583-1] c 52 N76-29894

**BODY VOLUME (BIOLOGY)**

Whole body measurement systems — for weightlessness simulation  
[NASA-CASE-MSC-13972-1] c 52 N74-10975

Apparatus for determining changes in limb volume  
[NASA-CASE-MSC-18759-1] c 52 N81-24716

**BODY-WING CONFIGURATIONS**

Free wing assembly for an aircraft  
[NASA-CASE-FRC-10092-1] c 05 N79-12061

Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279

**BOILERS**

Boiler for generating high quality vapor Patent  
[NASA-CASE-XLE-00785] c 33 N71-16104

Shell side liquid metal boiler  
[NASA-CASE-NPO-10831] c 33 N72-20915

**BOLMETERS**

Insertion loss measuring apparatus having transformer means connected across a pair of bolometers Patent  
[NASA-CASE-XNP-01193] c 10 N71-16057

Thin film capacitive bolometer and temperature sensor Patent  
[NASA-CASE-NPO-10607] c 09 N71-27232

Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449

**BOLTS**

Gas actuated bolt disconnect Patent  
[NASA-CASE-XLA-00326] c 03 N70-34667

Despin weight release Patent  
[NASA-CASE-XLA-00679] c 15 N70-38601

Inspection gage for boss Patent  
[NASA-CASE-XMF-04966] c 14 N71-17658

Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489

Fastener stretcher  
[NASA-CASE-GSC-11149-1] c 15 N73-30457

**BONDING**

Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735

Bonded joint and method — for reducing peak shear stress in adhesive bonds  
[NASA-CASE-LAR-10900-1] c 37 N74-23064

Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260

Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264

Bonding machine for forming a solar array strip  
[NASA-CASE-NPO-13652-2] c 44 N79-24431

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c 24 N79-25143

Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235

Attachment system for silica tiles — thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456

Surface texturing of fluoropolymers  
[NASA-CASE-LEW-13028-1] c 27 N82-33521

**BONES**

Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c 35 N75-12271

Method and system for in vivo measurement of bone tissue using a two level energy source  
[NASA-CASE-MSC-14276-1] c 52 N77-14737

Method of adhering bone to a rigid substrate using a graphite fiber reinforced bone cement  
[NASA-CASE-NPO-13764-1] c 27 N78-17215

**BOOMS (EQUIPMENT)**

Folding boom assembly Patent  
[NASA-CASE-XGS-00938] c 32 N70-41367

Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191

Minimech self-deploying boom mechanism  
[NASA-CASE-GSC-10566-1] c 15 N72-18477

Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c 03 N72-25021

**BOOSTER RECOVERY**

Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176

Recoverable single stage spacecraft booster Patent  
[NASA-CASE-XMF-01973] c 31 N70-41588

Orbiter/launch system  
[NASA-CASE-LAR-12250-1] c 14 N81-26161

**BOOSTER ROCKET ENGINES**

Segmented back-up bar Patent  
[NASA-CASE-XMF-00640] c 15 N70-39924

Recoverable single stage spacecraft booster Patent  
[NASA-CASE-XMF-01973] c 31 N70-41588

**BOOTS (FOOTWEAR)**

Walking boot assembly  
[NASA-CASE-ARC-11101-1] c 54 N78-17675

**BORIDES**

Cesium thermionic converters having improved electrodes  
[NASA-CASE-LEW-12038-3] c 44 N78-25555

**BORING MACHINES**

Boring bar drive mechanism Patent  
[NASA-CASE-XLA-03661] c 15 N71-33518

Borehole geological assessment  
[NASA-CASE-NPO-14231-1] c 46 N80-10709

**BORON**

Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c 76 N74-20329

**BORON CARBIDES**

Catalyst for growth of boron carbide single crystal whiskers  
[NASA-CASE-XHQ-03903] c 15 N69-21922

**BORON FIBERS**

Method and apparatus for strengthening boron fibers — high temperature oxidation  
[NASA-CASE-LEW-13826-1] c 24 N82-26385

**BORON FLUORIDES**

Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233

**BOROSILICATE GLASS**

Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520

**BOULES**

Improved ingot slicing machine  
[NASA-CASE-NPO-15483-1] c 37 N82-28642

**BOUNDARY LAYER CONTROL**

Double hinged flap Patent  
[NASA-CASE-XLA-01290] c 02 N70-42016

Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968

**BOUNDARY LAYER SEPARATION**

Tertiary flow injection thrust vectoring system Patent  
[NASA-CASE-MFS-20831] c 28 N71-29153

Controlled separation combustor — airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c 20 N76-14190

Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976

**BOUNDARY LAYER TRANSITION**

Detection of the transitional layer between laminar and turbulent flow areas on a wing surface — using an accelerometer to measure pressure levels during wind tunnel tests  
[NASA-CASE-LAR-12261-1] c 02 N80-20224

**BOUNDARY LAYERS**

Traversing probe Patent  
[NASA-CASE-XFR-02007] c 12 N71-24692

Apparatus for sensing temperature  
[NASA-CASE-XLE-05230] c 14 N72-27410

**BOXES (CONTAINERS)**

Storage container for electronic devices Patent  
[NASA-CASE-MFS-20075] c 09 N71-26133

**BRACKETS**

Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483

**BRAKES (FOR ARRESTING MOTION)**

Frangible tube energy dissipation Patent  
[NASA-CASE-XLA-00754] c 15 N70-34850

Emergency escape system Patent  
[NASA-CASE-KKS-07814] c 15 N71-27067

Sprag solenoid brake — development and operations of electrically controlled brake  
[NASA-CASE-MFS-21846-1] c 37 N74-26976

Reel safety brake  
[NASA-CASE-GSC-11960-1] c 37 N77-14479

Motion restraining device  
[NASA-CASE-NPO-13619-1] c 37 N78-16369

Moving body velocity arresting line cables with energy absorbing sleeves  
[NASA-CASE-LAR-12372-1] c 37 N82-18601

**BRAKING**

Regenerative braking system Patent  
[NASA-CASE-XMF-01096] c 10 N71-16030

Linear magnetic brake with two windings Patent  
[NASA-CASE-XLE-05079] c 15 N71-17652

Anemometer with braking mechanism Patent  
[NASA-CASE-XMF-05224] c 14 N71-23726

**BRAZING**

Pretreatment method for anti-wettable materials  
[NASA-CASE-XMS-03537] c 15 N69-21471

Process for applying a protective coating for salt bath brazing Patent  
[NASA-CASE-XLE-00046] c 15 N70-33311

Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443

Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365

Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125

Brazing alloy composition  
[NASA-CASE-XMF-06053] c 26 N75-27126

Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127

Method of fluxless brazing and diffusion bonding of aluminum containing components  
[NASA-CASE-MSC-14435-1] c 37 N76-18455

**BREATHING APPARATUS**

Transfer valve Patent  
[NASA-CASE-XAC-01158] c 15 N71-23051

Self-contained breathing apparatus  
[NASA-CASE-MSC-14733-1] c 54 N76-24900

Portable breathing system — a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MSC-16182-1] c 54 N80-10799

**BRICKS**

Foldable construction block  
[NASA-CASE-MSC-12233-2] c 32 N73-13921

**BRIGHTNESS**

Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479

**BRIGHTNESS DISCRIMINATION**

Television signal processing system Patent  
[NASA-CASE-NPO-10140] c 07 N71-24742

Visual examination apparatus  
[NASA-CASE-ARC-10329-1] c 05 N73-26072

Illumination control apparatus for compensating solar light  
[NASA-CASE-KSC-11010-1] c 74 N79-12890

**BRITTLENESS**

Rock sampling — apparatus for controlling particle size  
[NASA-CASE-XNP-10007-1] c 46 N74-23068

Rock sampling — method for controlling particle size distribution  
[NASA-CASE-XNP-09755] c 46 N74-23069

**BROADBAND**

Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462

Flexible blade antenna Patent  
[NASA-CASE-MSC-12101] c 09 N71-18720



Broadband frequency discriminator Patent  
[NASA-CASE-NPO-10096] c 07 N71-24583

Broadband microwave waveguide window Patent  
[NASA-CASE-XNP-08880] c 09 N71-24808

High-gain, broadband traveling wave maser Patent  
[NASA-CASE-NPO-10548] c 16 N71-24831

Wideband VCO with high phase stability Patent  
[NASA-CASE-XLA-03893] c 10 N71-27271

Composite antenna feed  
[NASA-CASE-GSC-11046-1] c 07 N73-28013

Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278

**BROADBAND AMPLIFIERS**

Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c 10 N71-26331

Cascaded complementary pair broadband transistor amplifiers Patent  
[NASA-CASE-NPO-10003] c 10 N71-26415

**BROADCASTING**

Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c 32 N75-26194

**BROMINE**

Hydrogen-bromine secondary battery  
[NASA-CASE-NPO-13237-1] c 44 N76-18641

**BRUSHES**

Method of making impurity-type semiconductor electrical contacts Patent  
[NASA-CASE-XMF-01016] c 26 N71-17818

**BRUSHES (ELECTRICAL CONTACTS)**

A brushless dc tachometer  
[NASA-CASE-NPO-15706-1] c 35 N82-26633

**BUBBLES**

Acoustic bubble removal  
[NASA-CASE-NPO-15334-1] c 37 N82-22497

Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

**BUCKLING**

Miniature vibration isolator Patent  
[NASA-CASE-XLA-01019] c 15 N70-40156

Compression test assembly  
[NASA-CASE-LAR-10440-1] c 14 N73-32323

**BUFFER STORAGE**

Data handling system based on source significance, storage availability and data received from the source Patent Application  
[NASA-CASE-XNP-04162-1] c 08 N70-34675

Data transfer system Patent  
[NASA-CASE-NPO-12107] c 08 N71-27255

Buffered analog converter  
[NASA-CASE-KSC-10397] c 08 N72-25206

Common data buffer system — communication with computational equipment utilized in spacecraft operations  
[NASA-CASE-KSC-11048-1] c 62 N81-24779

**BUFFERS (CHEMISTRY)**

Static continuous electrophoresis device  
[NASA-CASE-MFS-25306-1] c 25 N82-11147

**BUILDINGS**

Foldable construction block  
[NASA-CASE-MSC-12233-1] c 15 N72-25454

**BULBS**

External bulb variable volume maser  
[NASA-CASE-GSC-12334-1] c 36 N79-14362

**BULKHEADS**

Tank construction for space vehicles Patent  
[NASA-CASE-XMF-01899] c 31 N70-41948

**BUOYANCY**

Inflatable radar reflector unit Patent  
[NASA-CASE-XMS-00893] c 07 N70-40063

**BURNERS**

Micronized coal burner facility  
[NASA-CASE-LEW-13426-1] c 44 N82-31769

**BURNING RATE**

Burning rate control of solid propellants Patent  
[NASA-CASE-XLE-03494] c 27 N71-21819

Burn rate testing apparatus  
[NASA-CASE-XMS-09690] c 33 N72-25913

Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255

**BURNOUT**

Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c 28 N70-35381

**BURNS (INJURIES)**

Medical diagnosis system and method with multispectral imaging — depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783

**BUS CONDUCTORS**

Test apparatus for locating shorts during assembly of electrical buses  
[NASA-CASE-ARC-11116-1] c 33 N82-24420

**BUTT JOINTS**

Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860

Segmented back-up bar Patent  
[NASA-CASE-XMF-00640] c 15 N70-39924

Apparatus for welding sheet material — butt joints  
[NASA-CASE-XMS-01330] c 37 N75-27376

**BUTTERFLY VALVES**

Flexible seal for valves Patent  
[NASA-CASE-XLE-00101] c 15 N70-33376

**BYPASSES**

Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317

Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c 07 N69-24323

Current regulating voltage divider  
[NASA-CASE-MFS-20935] c 09 N71-34212

Use of unilluminated solar cells as shunt diodes for a solar array  
[NASA-CASE-GSC-10344-1] c 03 N72-27053

Shunt regulation electric power system  
[NASA-CASE-GSC-10135] c 33 N78-17296

Thrust reverser for a long duct fan engine — for turbofan engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293

## C

**CABLE FORCE RECORDERS**

Winch having cable position and load indicators Patent  
[NASA-CASE-MSC-12052-1] c 15 N71-24599

**CABLES**

Cable restraint  
[NASA-CASE-LAR-10129-1] c 15 N73-25512

Deployable flexible tunnel  
[NASA-CASE-MFS-22636-1] c 37 N76-22540

**CABLES (ROPES)**

High-voltage cable Patent  
[NASA-CASE-XNP-00738] c 09 N70-38201

Cable arrangement for rigid tethering Patent  
[NASA-CASE-XLA-02332] c 32 N71-17609

Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701

Satellite appendage tie down cord Patent  
[NASA-CASE-XGS-02554] c 31 N71-21064

Quick attach mechanism Patent  
[NASA-CASE-XFR-05421] c 15 N71-22994

Flexible/rigidifiable cable assembly  
[NASA-CASE-MSC-13512-1] c 15 N72-22485

Cable stabilizer for open shaft cable operated elevators  
[NASA-CASE-KSC-10513] c 15 N72-25453

Reeling system  
[NASA-CASE-LAR-10129-2] c 37 N74-20063

Emergency descent device  
[NASA-CASE-MFS-23074-1] c 54 N77-21844

Belt for transmitting power from a cogged driving member to a cogged driven member  
[NASA-CASE-GSC-12289-1] c 37 N80-32717

Moving body velocity arresting line cables with energy absorbing sleeves  
[NASA-CASE-LAR-12372-1] c 37 N82-18601

**CADMIUM SULFIDES**

High field CdS detector for infrared radiation  
[NASA-CASE-LAR-11027-1] c 35 N74-18088

CDS solid state phase insensitive ultrasonic transducer — annealing cadmium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559

**CALCIUM**

Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c 35 N75-12271

**CALCIUM FLUORIDES**

Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400

Method of making self lubricating fluoride-metal composite materials Patent  
[NASA-CASE-XLE-08511-2] c 18 N71-16105

**CALCIUM OXIDES**

Process for the preparation of calcium superoxide  
[NASA-CASE-ARC-11053-1] c 25 N79-10162

**CALCIUM PHOSPHATES**

Process for the preparation of brushite crystals  
[NASA-CASE-ERC-10338] c 04 N72-33072

**CALCULATORS**

Sun angle calculator  
[NASA-CASE-MSC-12617-1] c 35 N76-29552

**CALCULI**

Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N82-26961

**CALIBRATING**

Self-calibrating displacement transducer Patent  
[NASA-CASE-XLA-00781] c 09 N71-22999

Pressure transducer calibrator Patent  
[NASA-CASE-XNP-01660] c 14 N71-23038

Apparatus for testing a pressure responsive instrument Patent  
[NASA-CASE-XMF-04134] c 14 N71-23755

Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606

Laser calibrator Patent  
[NASA-CASE-XLA-03410] c 16 N71-25914

Radar calibration sphere  
[NASA-CASE-XLA-11154] c 07 N72-21117

Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c 14 N73-30390

System for calibrating pressure transducer  
[NASA-CASE-LAR-10910-1] c 35 N74-13132

In situ transfer standard for ultrahigh vacuum gage calibration  
[NASA-CASE-LAR-10862-1] c 35 N74-15092

Ergometer calibrator — for any ergometer utilizing rotating shaft  
[NASA-CASE-MFS-21045-1] c 35 N75-15932

Ultrasonic calibration device — for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c 35 N76-15432

High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523

Electronically scanned pressure sensor module with in situ calibration capability  
[NASA-CASE-LAR-12230-1] c 35 N79-14347

Calibrating pressure switch  
[NASA-CASE-XMF-04494-1] c 33 N79-33392

Electromagnetic power absorber  
[NASA-CASE-NPO-13830-1] c 32 N80-14281

Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402

Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N81-33449

Strain gage calibration  
[NASA-CASE-LAR-12743-1] c 35 N82-32661

Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 32 N82-33593

**CALORIMETERS**

Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051

Heat flow calorimeter — measures output of Ni-Cd batteries  
[NASA-CASE-GSC-11434-1] c 34 N74-27859

Containerless high temperature calorimeter apparatus  
[NASA-CASE-MFS-23923-1] c 35 N81-19426

**CAMERA SHUTTERS**

Electrically-operated rotary shutter Patent  
[NASA-CASE-XNP-00637] c 14 N70-40273

Fast opening diaphragm Patent  
[NASA-CASE-XLA-03660] c 15 N71-21060

Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427

Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly — for use with cameras mounted in satellites  
[NASA-CASE-GSC-11560-1] c 33 N74-20861

**CAMERAS**

Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976

Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474

Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10686] c 14 N71-28935

Laser camera and diffusion filter therefore Patent  
[NASA-CASE-NPO-10417] c 16 N71-33410

Optical binocular scanning apparatus  
[NASA-CASE-NPO-11002] c 14 N72-22441

On-film optical recording of camera lens settings  
[NASA-CASE-MSC-12363-1] c 14 N73-26431

Exposure interlock for oscilloscope cameras  
[NASA-CASE-LAR-10319-1] c 14 N73-32322

Real time moving scene holographic camera system  
[NASA-CASE-MFS-21087-1] c 35 N74-17153

Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014

Spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c 35 N75-19613

Real time, large volume, moving scene holographic camera system  
[NASA-CASE-MFS-22537-1] c 35 N75-27328

Holographic motion picture camera with Doppler shift compensation  
[NASA-CASE-MFS-22517-1] c 35 N76-18402

**CAMS**

Controlled caging and uncaging mechanism  
[NASA-CASE-GSC-11063-1] c 37 N77-27400

Cam-operated pitch-change apparatus  
[NASA-CASE-LEW-13050-1] c 07 N79-14095

CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690

**CANARD CONFIGURATIONS**

Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629



Supersonic transport — using canard surfaces  
[NASA-CASE-LAR-11932-1] c 05 N78-32086  
Missile rolling tail brake torque system — simulating bearing friction on canard controlled missiles  
[NASA-CASE-LAR-12751-1] c 37 N82-26675

**CANCER**  
Coupling apparatus for ultrasonic medical diagnostic system  
[NASA-CASE-NPO-13935-1] c 52 N79-14751  
Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996

**CANOPES**  
Transparent fire resistant polymers structures  
[NASA-CASE-ARC-10813-1] c 27 N76-16230  
Aircraft canopy lock  
[NASA-CASE-FRC-11065-1] c 05 N81-24047  
Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330

**CANS**  
Canister closing device Patent  
[NASA-CASE-XLA-01446] c 15 N71-21528  
Extrusion can  
[NASA-CASE-NPO-10812] c 15 N73-13464

**CANTILEVER BEAMS**  
Inflatable support structure Patent  
[NASA-CASE-XLA-01731] c 32 N71-21045  
Cantilever mounted resilient pad gas bearing  
[NASA-CASE-LEW-12569-1] c 37 N79-10418

**CANTILEVER MEMBERS**  
Deployable solar cell array  
[NASA-CASE-NPO-10883] c 31 N72-22874  
Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648-1] c 35 N77-14407

**CAPACITANCE**  
Device for determining the accuracy of the flare on a flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785  
Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790  
Thin film capacitive bolometer and temperature sensor Patent  
[NASA-CASE-NPO-10607] c 09 N71-27232  
Capacitive tank gaging apparatus being independent of liquid distribution  
[NASA-CASE-MFS-21629] c 14 N72-22442  
Capacitance multiplier and filter synthesizing network  
[NASA-CASE-NPO-11948-1] c 33 N74-32712  
Direct reading inductance meter  
[NASA-CASE-NPO-13792-1] c 35 N77-32455  
Dynamic capacitor having a peripherally driven element and system incorporating the same  
[NASA-CASE-XNP-02899-1] c 33 N79-21265

**CAPACITANCE SWITCHES**  
Electrical discharge apparatus for forming Patent  
[NASA-CASE-XMF-00375] c 15 N70-34249  
Ultra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit Patent  
[NASA-CASE-XGS-00381] c 09 N70-34819  
Feedback integrator with grounded capacitor Patent  
[NASA-CASE-XAC-10607] c 10 N71-23669

**CAPACITORS**  
Temperature sensitive capacitor device  
[NASA-CASE-XNP-09750] c 14 N69-39937  
Space vehicle electrical system Patent  
[NASA-CASE-XMF-00517] c 03 N70-34157  
Apparatus having coaxial capacitor structure for measuring fluid density Patent  
[NASA-CASE-XLE-00143] c 14 N70-36618  
Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent  
[NASA-CASE-XLE-01246] c 14 N71-10797  
Capacitor and method of making same Patent  
[NASA-CASE-LEW-10364-1] c 09 N71-13522  
Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976  
Ripple indicator  
[NASA-CASE-KSC-10162] c 09 N72-11225  
Thermoelectric radiometer utilizing polymer film  
[NASA-CASE-ARC-10138-1] c 14 N72-24477  
Screened circuit capacitors  
[NASA-CASE-LAR-10294-1] c 26 N72-28762  
Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477  
Insulated electrocardiographic electrodes — without paste electrolyte  
[NASA-CASE-MSC-14339-1] c 05 N75-24716  
High temperature beryllium oxide capacitor  
[NASA-CASE-LEW-11938-1] c 33 N76-15373  
Energy storage apparatus  
[NASA-CASE-GSC-12030-1] c 44 N78-24608  
Regulated high efficiency, lightweight capacitor-diode multiplier dc to dc converter  
[NASA-CASE-LEW-12791-1] c 33 N78-32341

Dynamic capacitor having a peripherally driven element and system incorporating the same  
[NASA-CASE-XNP-02899-1] c 33 N79-21265

**CAPILLARY FLOW**  
Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035  
Fluid lubricant system Patent  
[NASA-CASE-XNP-03972] c 15 N71-23048  
Soldering device Patent  
[NASA-CASE-XLA-08911] c 15 N71-27214  
Capillary flow weld-bonding  
[NASA-CASE-LAR-11726-1] c 37 N76-27568  
Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 34 N81-22310

**CAPILLARY TUBES**  
Fluid flow restrictor Patent  
[NASA-CASE-NPO-10117] c 15 N71-15608  
Water separating system Patent  
[NASA-CASE-XMS-13052] c 14 N71-20427  
Mercury capillary interrupter Patent  
[NASA-CASE-XNP-02251] c 12 N71-20896  
Diffused waveguiding capillary tube with distributed feedback for a gas laser  
[NASA-CASE-NPO-13544-1] c 36 N76-18428

**CARBAZOLES**  
Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
[NASA-CASE-NPO-10373] c 03 N71-18698

**CARBOHYDRATES**  
Decontamination of petroleum products Patent  
[NASA-CASE-XNP-03835] c 06 N71-23499

**CARBON**  
Low density bismaleimide-carbon microballoon composites — aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184  
Electrophotolysis oxidation system for measurement of organic concentration in water  
[NASA-CASE-MSC-16497-1] c 25 N82-12166  
Improved chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N82-22672

**CARBON ARCS**  
Water cooled contactor for anode in carbon arc mechanism  
[NASA-CASE-XMS-03700] c 15 N69-24266

**CARBON COMPOUNDS**  
Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00284] c 15 N71-16075  
Surfactant-assisted liquefaction of particulate carbonaceous substances  
[NASA-CASE-NPO-13904-1] c 25 N79-11152

**CARBON DIOXIDE**  
Techniques for insulating cryogenic fuel containers Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015  
Miniature carbon dioxide sensor and methods  
[NASA-CASE-MSC-13332-1] c 14 N72-21408  
Metabolic rate meter and method  
[NASA-CASE-MSC-12239-1] c 52 N79-21750

**CARBON DIOXIDE LASERS**  
Repetitively pulsed, wavelength selective laser Patent  
[NASA-CASE-ERC-10178] c 16 N71-24832  
Power supply for carbon dioxide lasers  
[NASA-CASE-GSC-11222-1] c 16 N73-32391  
Stark-effect modulation of CO<sub>2</sub> laser with NH<sub>2</sub>D  
[NASA-CASE-NPO-11945-1] c 36 N76-18427  
Tunable injection-locked pulsed CO<sub>2</sub> laser  
[NASA-CASE-NPO-14984-1] c 36 N81-15350

**CARBON DIOXIDE REMOVAL**  
Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813  
Regenerable device for scrubbing breathable air of CO<sub>2</sub> and moisture without special heat exchanger equipment  
[NASA-CASE-MSC-14771-1] c 54 N77-32722  
Portable breathing system — a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MSC-16182-1] c 54 N80-10799

**CARBON FIBER REINFORCED PLASTICS**  
Low density bismaleimide-carbon microballoon composites  
[NASA-CASE-ARC-11040-1] c 24 N79-16915  
Circumferential shaft seal  
[NASA-CASE-LEW-12119-1] c 37 N80-28711  
Curing agent for polyepoxides and epoxy resins and composites cured therewith — preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260  
Graphite/polyimide structural applications  
[NASA-CASE-LAR-12547-1] c 24 N82-25324

**CARBON MONOXIDE**  
Carbon monoxide monitor — using real time operation  
[NASA-CASE-MFS-22060-1] c 35 N75-29380

**CARBONATES**  
Polyurethanes of fluorine containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N73-30099  
Synthesis of dawsonites  
[NASA-CASE-ARC-113261-1] c 25 N80-31490

**CARBONIZATION**  
Method of carbonizing polyacrylonitrile fibers and resulting product  
[NASA-CASE-ARC-11261-1] c 24 N81-29164

**CARBONYL COMPOUNDS**  
Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246

**CARBORANE**  
Process for the preparation of polycarbonylphosphazenes — thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271  
Carboranylphosphazenes and their polymers — thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389

**CARBOXYL GROUP**  
Novel polycarboxylic prepolymeric materials and polymers thereof Patent  
[NASA-CASE-NPO-10596] c 06 N71-25929

**CARBOXYLIC ACIDS**  
Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids  
[NASA-CASE-LEW-11325-1] c 06 N73-27980  
Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098

**CARCINOGENS**  
Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c 14 N70-41676

**CARDIAC VENTRICLES**  
Contour detector and data acquisition system for the left ventricular outline  
[NASA-CASE-ARC-10985-1] c 52 N79-10724

**CARDIOGRAPHY**  
Digital cardiometer system Patent  
[NASA-CASE-XMS-02399] c 05 N71-22896  
Reference apparatus for medical ultrasonic transducer  
[NASA-CASE-ARC-10753-1] c 54 N75-27760

**CARDIOLOGY**  
Rate meter  
[NASA-CASE-MFS-20418] c 14 N73-24473  
Myocardium wall thickness transducer and measuring method  
[NASA-CASE-NPO-13644-1] c 52 N76-29895

**CARDIOTACHOMETERS**  
Digital computing cardiometer Patent  
[NASA-CASE-MFS-20284-1] c 52 N74-12778

**CARDIOVASCULAR SYSTEM**  
G conditioning suit Patent  
[NASA-CASE-XLA-02898] c 05 N71-20268  
Method and apparatus for continuously monitoring blood oxygenation, blood pressure, pulse rate and the pressure pulse curve utilizing an ear oximeter as transducer Patent  
[NASA-CASE-XAC-05422] c 04 N71-23185  
Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c 52 N76-29896  
Low X-ray absorption aneurysm clips  
[NASA-CASE-LAR-12650-1] c 52 N81-29768

**CARRIER FREQUENCIES**  
Bi-carrier demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c 07 N71-11298  
Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113  
Demodulator for carrier transducers  
[NASA-CASE-NUC-10107-1] c 33 N74-17930  
Decision feedback loop for tracking a polyphase modulated carrier  
[NASA-CASE-NPO-13103-1] c 32 N74-20811  
Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539

**CARRIER WAVES**  
Variable frequency oscillator with temperature compensation Patent  
[NASA-CASE-XNP-03916] c 09 N71-28810  
Modulator for tone and binary signals — phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981

**CARRIERS**  
Storage container for electronic devices Patent  
[NASA-CASE-MFS-20075] c 09 N71-26133  
Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c 34 N74-27744

**CARTESIAN COORDINATES**  
Random function tracer Patent  
[NASA-CASE-XLA-01401] c 15 N71-21179



## CARTRIDGES

- Endless tape cartridge Patent  
[NASA-CASE-XGS-00769] c 14 N70-41647
- Endless tape transport mechanism Patent  
[NASA-CASE-XGS-01223] c 07 N71-10609
- Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813

## CASCADE CONTROL

- Reversible ring counter employing cascaded single SCR stages Patent  
[NASA-CASE-XGS-01473] c 09 N71-10673
- Synchronous dc direct drive system Patent  
[NASA-CASE-GSC-10065-1] c 10 N71-27136
- Multiloop RC active filter apparatus having low parameter sensitivity with low amplifier gain  
[NASA-CASE-ARC-10192] c 09 N72-21245

## CASCADE FLOW

- Cascade plug nozzle --- for jet noise reduction  
[NASA-CASE-LAR-11674-1] c 07 N76-18117
- Deaerator/mixer for liquids  
[NASA-CASE-MSC-18936-1] c 25 N82-22329
- Thrust reverser for a long duct fan engine --- for turbofan engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293

## CASE BONDED PROPELLANTS

- Solid propellant motor  
[NASA-CASE-NPO-11458A] c 20 N78-32179

## CASES (CONTAINERS)

- Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c 03 N71-11053
- Protected isotope heat source --- for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876
- Portable heatable container  
[NASA-CASE-NPO-14237-1] c 44 N80-20808

## CASSEGRAIN ANTENNAS

- Cassegrain antenna subreflector flange for suppressing ground noise Patent  
[NASA-CASE-XNP-00683] c 09 N70-35425
- Multi-feed cone Cassegrain antenna Patent  
[NASA-CASE-NPO-10539] c 07 N71-11285
- Millimeter wave radiometer for radio astronomy Patent  
[NASA-CASE-XNP-09832] c 30 N71-23723
- Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c 09 N73-12214
- Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c 32 N74-11000

## CASTING

- Hydraulic casting of liquid polymers Patent  
[NASA-CASE-NPO-07659] c 06 N71-22975
- Asymmetric polyimide separation membrane and method  
[NASA-CASE-NPO-15431-1] c 25 N81-29178
- Acoustic bubble removal  
[NASA-CASE-NPO-15334-1] c 37 N82-22497
- Texturing polymer surfaces by transfer casting --- cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440

## CASTINGS

- Method of making an apertured casting --- using duplicate mold  
[NASA-CASE-LEW-11169-1] c 37 N76-23570
- Castable high temperature refractory materials  
[NASA-CASE-LEW-13080-2] c 27 N82-11210

## CATALYSIS

- Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504
- Apparatus for photon excited catalysis  
[NASA-CASE-NPO-13566-1] c 25 N77-32255
- Start up system for hydrogen generator used with an internal combustion engine  
[NASA-CASE-NPO-13849-1] c 28 N80-10374
- Diesel engine catalytic combustor system --- turbocharging  
[NASA-CASE-LEW-12995-1] c 37 N80-26659
- Autocatalytic coal liquefaction process  
[NASA-CASE-NPO-14876-2] c 28 N82-25394

## CATALYSTS

- Catalyst for growth of boron carbide single crystal whiskers  
[NASA-CASE-XHQ-03903] c 15 N69-21922
- Catalyst bed removing tool Patent  
[NASA-CASE-XFR-00811] c 15 N70-36901
- Ignition means for monopropellant Patent  
[NASA-CASE-XNP-00876] c 28 N70-41311
- Hydrogen leak detection device Patent  
[NASA-CASE-MFS-11537] c 14 N71-20442
- Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813
- Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides --- flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116

## CATHETERIZATION

- Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597

- Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c 52 N76-29896
- Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N81-27786

## CATHODE RAY TUBES

- Single or joint amplitude distribution analyzer Patent  
[NASA-CASE-XNP-01383] c 09 N71-10659
- Display for binary characters Patent  
[NASA-CASE-XGS-04987] c 08 N71-20571
- Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent  
[NASA-CASE-NPO-10625] c 09 N71-26182
- Color television systems using a single gun color cathode ray tube Patent  
[NASA-CASE-ERC-10098] c 09 N71-28618
- High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206
- Digital video display system using cathode ray tube  
[NASA-CASE-NPO-11342] c 09 N72-25248
- CRT blanking and brightness control circuit  
[NASA-CASE-KSC-10647-1] c 10 N72-31273
- Display system  
[NASA-CASE-ERC-10350] c 14 N73-20474
- Very high intensity light source using a cathode ray tube --- electron beams  
[NASA-CASE-XNP-01296] c 33 N75-27250

## CATHODES

- Ion thruster cathode Patent Application  
[NASA-CASE-LEW-10814-1] c 28 N70-35422
- Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
[NASA-CASE-XLE-04501] c 09 N71-23190
- Heat activated cell with alkali anode and alkali salt electrolyte Patent  
[NASA-CASE-LEW-11358] c 03 N71-26084
- Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783
- Storage battery comprising negative plates of a wedge shaped configuration --- for preventing shape change induced malfunctions  
[NASA-CASE-NPO-11806-1] c 44 N74-19693

## CATIONS

- Ionene membrane separator  
[NASA-CASE-NPO-11091] c 18 N72-22567
- Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104

## CAVITATION FLOW

- Semitoroidal diaphragm cavitating valve Patent  
[NASA-CASE-XNP-09704] c 12 N71-18615

## CAVITIES

- Black body cavity radiometer Patent  
[NASA-CASE-NPO-10810] c 14 N71-27323
- Method of coating through-holes Patent  
[NASA-CASE-XMF-05999] c 15 N71-29032
- Burrowing apparatus  
[NASA-CASE-XNP-07169] c 15 N73-32362
- Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c 20 N76-21276
- Method of making hollow elastomeric bodies  
[NASA-CASE-NPO-13535-1] c 37 N76-31524
- Method and apparatus for producing concentric hollow spheres --- inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319
- Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336
- Method and apparatus for producing concentric hollow spheres --- for nuclear fusion by inertial confinement  
[NASA-CASE-NPO-14596-2] c 31 N82-25401
- Method and apparatus for producing concentric hollow spheres  
[NASA-CASE-NPO-14596-3] c 27 N82-26461
- High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523

## CAVITY RESONATORS

- Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c 07 N69-24323
- System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616
- Temperature-compensating means for cavity resonator of amplifier Patent  
[NASA-CASE-XNP-00449] c 14 N70-35220
- Holder for crystal resonators Patent  
[NASA-CASE-XNP-03637] c 15 N71-21311
- System for improving signal-to-noise ratio of a communication signal  
[NASA-CASE-MSC-12259-2] c 07 N72-33146
- Infrared tunable laser  
[NASA-CASE-ARC-10463-1] c 09 N73-32111

- Tunable cavity resonator with ramp shaped supports  
[NASA-CASE-HQN-10790-1] c 36 N74-11313
- Laser apparatus  
[NASA-CASE-GSC-12237-1] c 36 N80-14384
- Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N81-12407
- Laser resonator  
[NASA-CASE-GSC-12565-1] c 36 N82-24485

## CELESTIAL BODIES

- Device for determining relative angular position between a spacecraft and a radiation emitting celestial body  
[NASA-CASE-GSC-11444-1] c 14 N73-28490
- Position determination systems --- using orbital antenna scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c 17 N76-21250

## CELESTIAL NAVIGATION

- Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c 14 N71-23797

## CELL ANODES

- Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579
- Method of making emf cell  
[NASA-CASE-LEW-11359-2] c 03 N72-20034
- Electrically rechargeable REDOX flow cell  
[NASA-CASE-LEW-12220-1] c 44 N77-14581

## CELL DIVISION

- Process for control of cell division  
[NASA-CASE-LAR-10773-3] c 51 N77-25769

## CELLS

- Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c 18 N71-20742

## CELLS (BIOLOGY)

- System for and method of freezing biological tissue  
[NASA-CASE-GSC-12173-1] c 51 N79-10694
- Method for separating biological cells --- suspended in aqueous polymer systems  
[NASA-CASE-MFS-23883-1] c 51 N80-16715

## CELLULOSE

- Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641
- Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643
- Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645
- Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370

## CENTRAL PROCESSING UNITS

- Massively parallel processor computer  
[NASA-CASE-GSC-12223-1] c 60 N79-27864

## CENTRIFUGAL COMPRESSORS

- Centrifugal-reciprocating compressor  
[NASA-CASE-NPO-14597-1] c 37 N79-23431

## CENTRIFUGAL FORCE

- Counter pumping debris excluder and separator --- gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090

## CENTRIFUGES

- Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815
- Separator Patent  
[NASA-CASE-XLA-00415] c 15 N71-16079
- Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c 34 N74-30608
- Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c 34 N75-26282
- Biocentrifuge system capable of exchanging specimen cages while in operational mode  
[NASA-CASE-MFS-23825-1] c 51 N81-32829

## CERAMIC BONDING

- Method of making a diffusion bonded refractory coating Patent  
[NASA-CASE-XLE-01604-2] c 15 N71-15610
- Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312

## CERAMIC COATINGS

- Evaporant holder  
[NASA-CASE-XLA-03105] c 15 N69-27483
- Unfired-ceramic flame-resistant insulation and method of making the same Patent  
[NASA-CASE-XMF-01030] c 18 N70-41583
- Ceramic insulation for radiant heating environments and method of preparing the same Patent  
[NASA-CASE-MFS-14253] c 33 N71-24858
- Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729
- Two-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-1] c 27 N76-22377
- Three-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c 27 N76-23426
- Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 27 N81-22190



Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-13359-1] c 27 N81-24265

Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492

**CERAMIC NUCLEAR FUELS**  
Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729

**CERAMICS**  
Transpiration cooled turbine blade manufactured from wares Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226

Foamed in place ceramic refractory insulating material Patent  
[NASA-CASE-XGS-02435] c 18 N71-22998

Method for fiberizing ceramic materials Patent  
[NASA-CASE-XNP-00597] c 18 N71-23088

Method of coating through-holes Patent  
[NASA-CASE-XMF-05999] c 15 N71-29032

Extrusion can  
[NASA-CASE-NPO-10812] c 15 N73-13464

Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584

Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206

High temperature resistant cermet and ceramic compositions --- for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302

Thermal insulation attaching means --- adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MS-C-12619-2] c 27 N79-12221

High temperature resistant cermet and ceramic compositions  
[NASA-CASE-NPO-13690-2] c 27 N79-14213

Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MS-C-18791-1] c 37 N81-24446

Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371

Castable high temperature refractory materials  
[NASA-CASE-LEW-13080-2] c 27 N82-11210

Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26674

Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453

**CEREBROSPINAL FLUID**  
Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N81-27786

**CERMETS**  
Process of casting heavy slips Patent  
[NASA-CASE-XLE-00106] c 15 N71-16076

Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729

Cermet composition and method of fabrication --- heat resistant alloys and powders  
[NASA-CASE-NPO-13120-1] c 27 N76-15311

High temperature oxidation resistant cermet compositions  
[NASA-CASE-NPO-13666-1] c 27 N77-13217

High temperature resistant cermet and ceramic compositions --- for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302

High temperature resistant cermet and ceramic compositions  
[NASA-CASE-NPO-13690-2] c 27 N79-14213

**CESIUM**  
Method for removing oxygen impurities from cesium Patent  
[NASA-CASE-XNP-04262-2] c 17 N71-26773

Method of producing I-123 --- by bombardment of cesium causing spallation  
[NASA-CASE-LEW-11390-2] c 25 N76-27383

**CESIUM DIODES**  
Thermionic tantalum emitter doped with oxygen Patent Application  
[NASA-CASE-NPO-11138] c 03 N70-34646

Cavity emitter for thermionic converter Patent  
[NASA-CASE-NPO-10412] c 09 N71-28421

Improved thermionic energy converters  
[NASA-CASE-LEW-12443-1] c 44 N81-19561

**CESIUM ENGINES**  
Variable thrust ion engine utilizing thermally decomposable solid fuel Patent  
[NASA-CASE-XMF-00923] c 28 N70-36802

Method of producing porous tungsten ionizers for ion rocket engines Patent  
[NASA-CASE-XLE-00455] c 28 N70-38197

**CESIUM VAPOR**

Electric power generation system directory from laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524

Cesium thermionic converters having improved electrodes  
[NASA-CASE-LEW-12038-3] c 44 N78-25555

**CHANNEL FLOW**

Method of making a regeneratively cooled combustion chamber Patent  
[NASA-CASE-XLE-00150] c 28 N70-41818

Heated element fluid flow sensor Patent  
[NASA-CASE-MS-C-12084-1] c 12 N71-17569

**CHANNELS (DATA TRANSMISSION)**

Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c 09 N71-18843

Helical recorder arrangement for multiple channel recording on both sides of the tape  
[NASA-CASE-GSC-10614-1] c 09 N72-11224

Asynchronous, multiplexing, single line transmission and recovery data system --- for satellite use  
[NASA-CASE-NPO-13321-1] c 32 N75-26195

Massively parallel processor computer  
[NASA-CASE-GSC-12223-1] c 60 N79-27864

High-speed data link for moderate distances and noisy environments  
[NASA-CASE-NPO-14152-1] c 32 N80-18252

**CHARACTER RECOGNITION**

Automatic character skew and spacing checking network --- of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c 33 N76-18353

System and method for character recognition  
[NASA-CASE-NPO-11337-1] c 74 N81-19896

**CHARGE COUPLED DEVICES**

CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N79-17134

Multispectral imaging and analysis system --- using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288

CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N81-27396

Programmable scan/read circuitry for charge coupled device imaging detectors --- for a startracker  
[NASA-CASE-NPO-15345-1] c 33 N81-27403

**CHARGE DISTRIBUTION**

Method of erasing target material of a vidicon tube or the like Patent  
[NASA-CASE-XNP-06028] c 09 N71-23189

Charge storage diode modulators and demodulators  
[NASA-CASE-NPO-10189-1] c 33 N77-21314

**CHARGE EXCHANGE**

Ion beam thruster shield  
[NASA-CASE-LEW-12082-1] c 20 N77-10148

**CHARGE TRANSFER**

Magnetic counter Patent  
[NASA-CASE-XNP-08836] c 09 N71-12515

Pressure transducer --- using a monomeric charge transfer complex sensor  
[NASA-CASE-NPO-11150] c 35 N78-17359

**CHARGE TRANSFER DEVICES**

Charge transfer reaction laser with preionization means  
[NASA-CASE-NPO-13945-1] c 36 N78-27402

Time delay and integration detectors using charge transfer devices  
[NASA-CASE-GSC-12324-1] c 33 N81-33403

Image readout device with electronically variable spatial resolution  
[NASA-CASE-LAR-12633-1] c 33 N82-24416

**CHARGED PARTICLES**

Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560

Electrostatic charged particle analyzer having deflection members shaped according to the periodic voltage applied thereto Patent  
[NASA-CASE-XAC-05506-1] c 24 N71-16095

Electrostatic collector for charged particles  
[NASA-CASE-LEW-11192-1] c 09 N73-13208

Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c 33 N77-10429

**CHARGING**

Synchronous orbit battery cyclers  
[NASA-CASE-GSC-11211-1] c 03 N72-25020

**CHARRING**

Ablation sensor  
[NASA-CASE-XLA-01781] c 14 N69-39975

Ablation sensor Patent  
[NASA-CASE-XLA-01794] c 33 N71-21586

**CHASSIS**

Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467

**CHECKOUT**

Electronic checkout system for space vehicles Patent  
[NASA-CASE-XKS-08012-2] c 31 N71-15566

Rapid activation and checkout device for batteries  
[NASA-CASE-MFS-22749-1] c 44 N76-14601

Decommutator patchboard venfier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359

**CHELATES**

Ammonium perchlorate composite propellant containing an organic transitional metal chelate catalytic additive Patent  
[NASA-CASE-LAR-10173-1] c 27 N71-14090

Chelate-modified polymers for atmospheric gas chromatography  
[NASA-CASE-ARC-11154-1] c 25 N80-23383

**CHEMICAL ANALYSIS**

Analytical test apparatus and method for determining oxide content of alkali metal Patent  
[NASA-CASE-XLE-01997] c 06 N71-23527

Automated fluid chemical analyzer Patent  
[NASA-CASE-XNP-09451] c 06 N71-26754

Method for determining presence of OH in magnesium oxide  
[NASA-CASE-NPO-10774] c 06 N72-17095

Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477

Chromato-fluorographic drug detector --- device for detecting and recording fluorescent properties of materials  
[NASA-CASE-ARC-10633-1] c 25 N74-26947

Amino acid analysis  
[NASA-CASE-NPO-12130-1] c 25 N75-14844

Gas chromatograph injection system  
[NASA-CASE-ARC-10344-2] c 35 N75-26334

System for monitoring physical characteristics of fluids --- acoustic techniques  
[NASA-CASE-NPO-15400-1] c 34 N81-24384

Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645

**CHEMICAL AUXILIARY POWER UNITS**

Ion-exchange membrane with platinum electrode assembly Patent  
[NASA-CASE-XMS-02063] c 03 N71-29044

**CHEMICAL BONDS**

Fluorine-containing polyformals  
[NASA-CASE-XMF-06900-1] c 27 N79-21191

Perfluoroalkyl polytriazines containing pendent iododifluoromethyl groups  
[NASA-CASE-ARC-11241-1] c 25 N81-14016

Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353

**CHEMICAL COMPOSITION**

Phototropic composition of matter  
[NASA-CASE-XGS-03736] c 14 N72-22443

Nitramine propellants --- gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255

Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-19296

Non-toxic invert analog glass compositions of high modulus  
[NASA-CASE-HQN-10328-2] c 27 N82-29454

High modulus rare earth and beryllium containing silicate glass compositions --- for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455

**CHEMICAL COMPOUNDS**

Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428

**CHEMICAL ELEMENTS**

Apparatus for remote handling of materials --- mixing or analyzing dangerous chemicals  
[NASA-CASE-LAR-10634-1] c 37 N74-18123

**CHEMICAL ENGINEERING**

Process for the preparation of calcium superoxide  
[NASA-CASE-ARC-11053-1] c 25 N79-10162

**CHEMICAL EXPLOSIONS**

Hypervelocity gun --- using both electric and chemical energy for projectile propulsion  
[NASA-CASE-XLE-03186-1] c 09 N79-21084

**CHEMICAL MACHINING**

Masking device Patent  
[NASA-CASE-XNP-02092] c 15 N70-42033

**CHEMICAL PROPERTIES**

Method of producing alternating ether siloxane copolymers Patent  
[NASA-CASE-XLE-02584] c 06 N71-20905

Polyurethanes of fluorine containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N73-30099

Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076

Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c 37 N74-21058



## CHEMICAL REACTIONS

- Process for interfacial polymerization of pyromellitic dianhydride and 1,2,4,5-tetraamino-benzene Patent  
[NASA-CASE-XLA-03104] c 06 N71-11235
- Synthesis of polymeric schiff bases by schiff-base exchange reactions Patent  
[NASA-CASE-XMF-08651] c 06 N71-11236
- Preparation of ordered poly /arylenesiloxane/ polymers  
[NASA-CASE-XMF-10753] c 06 N71-11237
- Imidazopyrrolone/imide copolymers Patent  
[NASA-CASE-XLA-08802] c 06 N71-11238
- High resolution developing of photosensitive resists Patent  
[NASA-CASE-XGS-04993] c 14 N71-17574
- Inorganic solid film lubricants Patent  
[NASA-CASE-XMF-03988] c 15 N71-21403
- Process for preparation of dianilinosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230
- Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740
- Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c 06 N71-27254
- Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent  
[NASA-CASE-HGN-10364] c 06 N71-27363
- Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372
- Epoxy-aziridine polymer product Patent  
[NASA-CASE-NPO-10701] c 06 N71-28620
- Process for preparation of high-molecular-weight polyaryloxysilanes Patent  
[NASA-CASE-XMF-08674] c 06 N71-28807
- Trialkyl-dihalotantalum and niobium compounds Patent  
[NASA-CASE-XNP-04023] c 06 N71-28808
- Method of making foamed materials in zero gravity  
[NASA-CASE-XMF-09902] c 15 N72-11387
- Preparation of high purity copper fluoride  
[NASA-CASE-LEW-10794-1] c 06 N72-17093
- Firefly pump-metering system  
[NASA-CASE-GSC-10218-1] c 15 N72-21465
- Apparatus for producing metal powders  
[NASA-CASE-XLE-08461-2] c 17 N72-28535
- Nondestructive spot test method for titanium and titanium alloys  
[NASA-CASE-LAR-10539-1] c 17 N73-12547
- Self-cycling fluid heater  
[NASA-CASE-MSC-15567-1] c 33 N73-16918
- Method of forming difunctional polyisobutylene  
[NASA-CASE-NPO-10893] c 27 N73-22710
- Polyurethanes from fluoroalkyl propylene glycol polyethers  
[NASA-CASE-MFS-10506] c 06 N73-30100
- Fluorine containing polyurethane  
[NASA-CASE-MFS-10509] c 06 N73-30103
- Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029
- Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812
- Intumescent composition, foamed product prepared therewith and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037
- Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c 25 N75-26043
- Utilization of oxygen difluoride for syntheses of fluoropolymers  
[NASA-CASE-NPO-12061-1] c 27 N76-16228
- Method for detecting pollutants --- through chemical reactions and heat treatment  
[NASA-CASE-LAR-11405-1] c 45 N76-31714
- Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229
- Preparation of perfluorinated imidoylamidoximes --- for eventual preparation of heat and chemical resistant polymers  
[NASA-CASE-ARC-11267-1] c 23 N80-26386
- Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-1] c 27 N80-26447
- An improved synthesis of 2,4,8,10-tetroxaspiro (5,5) undecane  
[NASA-CASE-ARC-11243-2] c 23 N80-31472
- Method for preparing addition type polyimide prepreps  
[NASA-CASE-LAR-12054-2] c 27 N81-14078
- The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312
- Elastomer toughened polyimide adhesives  
[NASA-CASE-LAR-12775-1] c 27 N82-25384
- Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353

## CHEMICAL REACTORS

- Chemical vapor deposition reactor --- providing uniform film thickness  
[NASA-CASE-NPO-13650-1] c 25 N79-28253
- Sodium storage and injection system  
[NASA-CASE-NPO-14384-1] c 37 N80-10494
- Method of producing silicon --- gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231
- Fluidized bed coal combustion reactor  
[NASA-CASE-NPO-14273-1] c 25 N82-11144
- Solar heated fluidized bed gasification system  
[NASA-CASE-NPO-15071-1] c 44 N82-16475

## CHEMICAL TESTS

- Nondestructive spot test method for titanium and titanium alloys  
[NASA-CASE-LAR-10539-1] c 17 N73-12547
- Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446

## CHEMILUMINESCENCE

- Method and apparatus for eliminating luminol interference material  
[NASA-CASE-MSC-16260-1] c 51 N80-16714

## CHEMOTHERAPY

- Indomethacin-antihistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-2] c 52 N81-14613

## CHIPS (ELECTRONICS)

- Head for high speed spinner having a vacuum chuck --- holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482
- Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441

## CHIRP SIGNALS

- Method for shaping and aiming narrow beams --- sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443

## CHLORINATION

- Specialized halogen generator for purification of water  
[NASA-CASE-XLA-08913] c 14 N71-28933
- Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 28 N82-12240
- Coal desulfurization by aqueous chlorination  
[NASA-CASE-NPO-14902-1] c 25 N82-29371

## CHLOROPRENE RESINS

- Flexible fire retardant polyisocyanate modified neoprene foam --- for thermal protective devices  
[NASA-CASE-ARC-10180-1] c 27 N74-12814

## CHOKES

- Current dependent filter inductance  
[NASA-CASE-ERC-10139] c 09 N72-17154

## CHOKES (RESTRICTIONS)

- Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270

## CHOLESTEROL

- Reduction of blood serum cholesterol  
[NASA-CASE-NPO-12119-1] c 52 N75-15270

## CHROMATOGRAPHY

- Chromato-fluorographic drug detector --- device for detecting and recording fluorescent properties of materials  
[NASA-CASE-ARC-10633-1] c 25 N74-26947

## CHROMIUM

- Selective coating for solar panels --- using black chrome and black nickel  
[NASA-CASE-LEW-12159-1] c 44 N78-19599
- Efficiency of silicon solar cells containing chromium  
[NASA-CASE-NPO-15179-1] c 44 N82-26777

## CHROMIUM ALLOYS

- Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236
- Nickel ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505

## CHROMIUM COMPOUNDS

- Improved chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N82-22672

## CHROMOSOMES

- Automated clinical system for chromosome analysis  
[NASA-CASE-NPO-13913-1] c 52 N79-12694

## CINEMATOGRAPHY

- High speed photo-optical time recording  
[NASA-CASE-KSC-10294] c 14 N72-18411
- Holographic motion picture camera with Doppler shift compensation  
[NASA-CASE-MFS-22517-1] c 35 N76-18402

## CIRCUIT BOARDS

- Electrical feed-through connection for printed circuit boards and printed cable  
[NASA-CASE-XMF-01483] c 14 N69-27431
- Printed cable connector Patent  
[NASA-CASE-XMF-00369] c 09 N70-36494

Printed circuit board with bellows rivet connection Patent

- [NASA-CASE-XNP-05082] c 15 N70-41960
- Electrical spot terminal assembly Patent  
[NASA-CASE-NPO-10034] c 15 N71-17685
- Polyimide resin-fiberglass cloth laminates for printed circuit boards  
[NASA-CASE-MFS-20408] c 18 N73-12604
- Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c 10 N73-25243
- Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c 37 N74-32918
- Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c 37 N75-18573
- Connector --- for connecting circuits on different layers of multilayer printed circuit boards  
[NASA-CASE-LAR-11709-1] c 37 N76-27567
- Traveling wave tube circuit  
[NASA-CASE-LEW-12013-1] c 33 N79-10339

## CIRCUIT BREAKERS

- Mercury capillary interrupter Patent  
[NASA-CASE-XNP-02251] c 12 N71-20896
- Diode and protection fuse unit Patent  
[NASA-CASE-XKS-03381] c 09 N71-22796
- Separation simulator Patent  
[NASA-CASE-XKS-04631] c 10 N71-23663
- Detentling servomotor Patent  
[NASA-CASE-XNP-06936] c 15 N71-24695
- Circuit breaker utilizing magnetic latching relays Patent  
[NASA-CASE-MSC-11277] c 09 N71-29008
- Multiple circuit protector device  
[NASA-CASE-XMS-02744] c 33 N75-27249
- Solar concentrator protective system  
[NASA-CASE-NPO-15662-1] c 44 N82-28785

## CIRCUIT DIAGRAMS

- Excitation and detection circuitry for a flux responsive magnetic head  
[NASA-CASE-XNP-04183] c 09 N69-24329
- Signal multiplexer  
[NASA-CASE-XNP-03110] c 07 N69-24334
- Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463
- Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500
- Ultra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit Patent  
[NASA-CASE-XGS-00381] c 09 N70-34819
- Frequency shift keyed demodulator Patent  
[NASA-CASE-XGS-02889] c 07 N71-11282
- Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537
- High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c 09 N71-19516
- Weld control system using thermocouple wire Patent  
[NASA-CASE-MFS-06074] c 15 N71-20393
- Correlation function apparatus Patent  
[NASA-CASE-XNP-00746] c 07 N71-21476
- Diode and protection fuse unit Patent  
[NASA-CASE-XKS-03381] c 09 N71-22796
- Buck boost voltage regulation circuit Patent  
[NASA-CASE-GSC-10735-1] c 10 N71-26085
- Active RC networks  
[NASA-CASE-ARC-10042-2] c 10 N72-11256
- Microcircuit negative cutter  
[NASA-CASE-XLA-09843] c 15 N72-27485
- Self-regulating proportionally controlled heating apparatus and technique  
[NASA-CASE-GSC-11752-1] c 77 N75-20140
- Symmetrical odd-modulus frequency divider  
[NASA-CASE-NPO-13426-1] c 33 N75-31330
- Trielectrode capacitive pressure transducer  
[NASA-CASE-ARC-10711-2] c 33 N76-21390
- Frequency discriminator and phase detector circuit  
[NASA-CASE-NPO-11515-1] c 33 N77-13315

## CIRCUIT PROTECTION

- Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146
- Protective circuit of the spark gap type  
[NASA-CASE-XAC-08981] c 09 N69-39897
- Electrical load protection device Patent  
[NASA-CASE-MSC-12135-1] c 09 N71-12526
- Apparatus for overcurrent protection of a push-pull amplifier Patent  
[NASA-CASE-MSC-12033-1] c 09 N71-13531
- Method of coating circuit paths on printed circuit boards with solder Patent  
[NASA-CASE-XMF-01599] c 09 N71-20705
- Power supply circuit Patent  
[NASA-CASE-XMS-00913] c 10 N71-23543
- Selective plating of etched circuits without removing previous plating Patent  
[NASA-CASE-XGS-03120] c 15 N71-24047



Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366

Power responsive overload sensing circuit Patent  
[NASA-CASE-GSC-10667-1] c 10 N71-33129

Saturation current protection apparatus for saturable core transformers  
[NASA-CASE-ERC-10075-2] c 09 N72-22196

Electrical insulating layer process  
[NASA-CASE-LEW-10489-1] c 15 N72-25447

Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956

Overvoltage protection network  
[NASA-CASE-ARC-10197-1] c 33 N74-17929

Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c 37 N75-18573

Multiple circuit protector device  
[NASA-CASE-XMS-02744] c 33 N75-27249

Multi-cell battery protection system  
[NASA-CASE-LEW-12039-1] c 44 N78-14625

Fused switch  
[NASA-CASE-XMS-01244-1] c 33 N79-33393

Base drive for paralleled inverter systems  
[NASA-CASE-NPO-14163-1] c 33 N81-14220

Shielded conductor cable system  
[NASA-CASE-MSC-12745-1] c 33 N81-27397

Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404

**CIRCUITS**

Connector - Electrical  
[NASA-CASE-XLA-01288] c 09 N69-21470

Binary magnetic memory device Patent  
[NASA-CASE-XGS-00174] c 08 N70-34743

Electronic motor control system Patent  
[NASA-CASE-XMF-01129] c 09 N70-38712

Starting circuit for vapor lamps and the like Patent  
[NASA-CASE-XNP-01058] c 09 N71-12540

Drift compensation circuit for analog to digital converter Patent  
[NASA-CASE-XNP-04780] c 08 N71-19687

High voltage divider system Patent  
[NASA-CASE-XLE-02008] c 09 N71-21583

Solar cell and circuit array and process for nullifying magnetic fields Patent  
[NASA-CASE-XGS-03390] c 03 N71-23187

Dual polarity full wave dc motor drive Patent  
[NASA-CASE-XNP-07477] c 09 N71-26092

Temperature regulation circuit Patent  
[NASA-CASE-XNP-02792] c 14 N71-28958

Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
[NASA-CASE-XNP-00745] c 10 N71-28960

Digital pulse width selection circuit Patent  
[NASA-CASE-XLA-07788] c 09 N71-29139

Power responsive overload sensing circuit Patent  
[NASA-CASE-GSC-10667-1] c 10 N71-33129

Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200

Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
[NASA-CASE-NPO-11388] c 03 N72-23048

Controllable load insensitive power converters  
[NASA-CASE-ERC-10268] c 09 N72-25252

Failsafe multiple transformer circuit configuration  
[NASA-CASE-NPO-11078] c 09 N72-25262

Microcircuit negative cutter  
[NASA-CASE-XLA-09843] c 15 N72-27485

Infinite range electronics gain control circuit  
[NASA-CASE-GSC-10786-1] c 10 N72-28241

Active tuned circuit  
[NASA-CASE-GSC-11340-1] c 10 N72-33230

Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-1] c 14 N73-14428

Driving lamps by induction  
[NASA-CASE-MFS-21214-1] c 09 N73-30181

Circuit for detecting initial systole and diastolic notch — for monitoring arterial pressure  
[NASA-CASE-LEW-11581-1] c 54 N75-13531

Peak holding circuit for extremely narrow pulses  
[NASA-CASE-MSC-14129-1] c 33 N75-18479

High voltage distributor  
[NASA-CASE-GSC-11849-1] c 33 N76-16332

Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257

Process for preparing high temperature polyimide film laminates  
[NASA-CASE-LAR-12742-1] c 24 N81-12174

Method and apparatus for fabricating improved solar cell modules  
[NASA-CASE-NPO-14416-1] c 44 N81-14389

Ladder supported ring bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N81-24348

Programmable scan/read circuitry for charge coupled device imaging detectors — for a startracker  
[NASA-CASE-NPO-15345-1] c 33 N81-27403

**CIRCULAR CONES**

Optical inspection apparatus Patent  
[NASA-CASE-XMF-00462] c 14 N70-34298

**CIRCULAR CYLINDERS**

Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479

**CIRCULAR POLARIZATION**

Electromagnetic polarization systems and methods Patent  
[NASA-CASE-GSC-10021-1] c 09 N71-24595

Virtual wall slot circularly polarized planar array antenna  
[NASA-CASE-NPO-10301] c 07 N72-11148

Circularly polarized antenna  
[NASA-CASE-ERC-10214] c 09 N72-31235

**CIRCULAR TUBES**

Evacuated displacement compression molding  
[NASA-CASE-LAR-10782-1] c 31 N74-14133

**CIRCULATORS (PHASE SHIFT CIRCUITS)**

Circulator having quarter wavelength resonant post and parametric amplifier circuits utilizing the same Patent  
[NASA-CASE-XNP-02140] c 09 N71-23097

Dielectric-loaded waveguide circulator for cryogenically cooled and cascaded maser waveguide structures  
[NASA-CASE-NPO-14254-1] c 36 N80-18372

**CLAMPING CIRCUITS**

Amplifier clamping circuit for horizon scanner Patent  
[NASA-CASE-XGS-01784] c 10 N71-20782

**CLAMPS**

Portable alignment tool Patent  
[NASA-CASE-XMF-01452] c 15 N70-41371

Hydraulic grip Patent  
[NASA-CASE-XLA-05100] c 15 N71-17696

Clamping assembly for inertial components Patent  
[NASA-CASE-XMS-02184] c 15 N71-20813

Central spar and module joint Patent  
[NASA-CASE-XNP-02341] c 15 N71-21531

Quick attach mechanism Patent  
[NASA-CASE-XFR-05421] c 15 N71-22994

Clamp-mount device  
[NASA-CASE-MFS-25510-1] c 37 N82-11470

Reusable thermal cycling clamp — holders for directional solidification experiments  
[NASA-CASE-LAR-12868-1] c 27 N82-18390

Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25640-1] c 52 N82-26962

**CLAYS**

Inorganic thermal control pigment Patent  
[NASA-CASE-XNP-02139] c 18 N71-24184

**CLEAN ROOMS**

Air conditioned suit  
[NASA-CASE-LAR-10076-1] c 05 N73-20137

**CLEANERS**

Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c 28 N71-28849

Noncontaminating swabs  
[NASA-CASE-MFS-18100] c 15 N72-11390

**CLEANING**

Disk pack cleaning table Patent Application  
[NASA-CASE-LAR-10590-1] c 15 N70-26819

System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724

**CLEAR AIR TURBULENCE**

Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437

Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028

**CLEARANCES**

Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366

**CLEAVAGE**

Workpiece positioning vise  
[NASA-CASE-GSC-12762-1] c 37 N82-29604

Crystal cleaving machine  
[NASA-CASE-GSC-12584-1] c 37 N82-32730

**CLIMBING FLIGHT**

Aircraft instrument Patent  
[NASA-CASE-XLA-00487] c 14 N70-40157

**CLINICAL MEDICINE**

Process for the preparation of brushite crystals  
[NASA-CASE-ERC-10338] c 04 N72-33072

Measurement of gas production of microorganisms — using pressure sensors  
[NASA-CASE-LAR-11326-1] c 35 N75-33368

Production of I-123  
[NASA-CASE-LEW-11390-3] c 25 N76-29379

Automated clinical system for chromosome analysis  
[NASA-CASE-NPO-13913-1] c 52 N79-12694

Medical diagnosis system and method with multispectral imaging — depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783

**CLIPS**

Low X-ray absorption aneurysm clips  
[NASA-CASE-LAR-12650-1] c 52 N81-29768

**CLOCKS**

Time synchronization system utilizing moon reflected coded signals Patent  
[NASA-CASE-NPO-10143] c 10 N71-26326

Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137

Fault tolerant clock apparatus utilizing a controlled minority of clock elements  
[NASA-CASE-MSC-12531-1] c 35 N75-30504

Clock setter  
[NASA-CASE-LAR-11458-1] c 35 N76-16392

**CLOSED CIRCUIT TELEVISION**

Spacecraft docking and alignment system — using television camera system  
[NASA-CASE-MSC-12559-1] c 18 N76-14186

**CLOSED CYCLES**

Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c 21 N70-41930

Digital phase-locked loop  
[NASA-CASE-GSC-11623-1] c 33 N75-25040

Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27664

MHD electrical generator  
[NASA-CASE-NPO-15399-1] c 75 N82-24079

**CLOSED ECOLOGICAL SYSTEMS**

Recovery of potable water from human wastes in below-G conditions Patent  
[NASA-CASE-XLA-03213] c 05 N71-11207

Space vehicle with artificial gravity and earth-like environment  
[NASA-CASE-LEW-11101-1] c 31 N73-32750

Regenerable device for scrubbing breathable air of CO<sub>2</sub> and moisture without special heat exchanger equipment  
[NASA-CASE-MSC-14771-1] c 54 N77-32722

Cell and method for electrolysis of water and anode  
[NASA-CASE-MSC-16394-1] c 28 N81-24280

**CLOSURES**

Canister closing device Patent  
[NASA-CASE-XLA-01446] c 15 N71-21528

Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736

**CLOUD CHAMBERS**

Heat transfer device  
[NASA-CASE-MFS-22938-1] c 34 N76-18374

**CLOUD COVER**

Cloud cover sensor  
[NASA-CASE-NPO-14936-1] c 47 N80-26992

**CLOUDS (METEOROLOGY)**

Rocket borne instrument to measure electric fields inside electrified clouds  
[NASA-CASE-KSC-10730-1] c 14 N73-32318

Electric field measuring and display system — for cloud formations  
[NASA-CASE-KSC-10731-1] c 33 N74-27862

**CLUTCHES**

Directional gear ratio transmission  
[NASA-CASE-LAR-12644-1] c 37 N82-29605

**CLUTTER**

Clutter free synthetic aperture radar correlator  
[NASA-CASE-NPO-14035-1] c 32 N78-18266

**CMOS**

Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N79-12321

**COAL**

Underground mineral extraction  
[NASA-CASE-NPO-14140-1] c 31 N78-24387

Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443

Thickness measurement system  
[NASA-CASE-MFS-23721-1] c 31 N79-28370

Coal-rock interface detector  
[NASA-CASE-MFS-23725-1] c 43 N79-31706

Coal-shale interface detection system  
[NASA-CASE-MFS-23720-2] c 43 N80-14423

Coal-shale interface detector  
[NASA-CASE-MFS-23720-1] c 43 N80-23711

Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246

Supercritical multicomponent solvent coal extraction  
[NASA-CASE-NPO-15767-1] c 28 N82-12241

Coal desulfurization by aqueous chlornation  
[NASA-CASE-NPO-14902-1] c 25 N82-29371

**COAL GASIFICATION**

Pressure letdown method and device for coal conversion systems  
[NASA-CASE-NPO-15100-1] c 28 N81-33306

Solar heated fluidized bed gasification system  
[NASA-CASE-NPO-15071-1] c 44 N82-16475

Micronized coal burner facility  
[NASA-CASE-LEW-13426-1] c 44 N82-31769



**COAL LIQUEFACTION**

- Surfactant-assisted liquefaction of particulate carbonaceous substances  
[NASA-CASE-NPO-13904-1] c 25 N79-11152
- Autocatalytic coal liquefaction process  
[NASA-CASE-NPO-14876-2] c 28 N82-25394

**COAL UTILIZATION**

- Coal desulfurization process  
[NASA-CASE-NPO-13937-1] c 44 N78-31527
- Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154
- Fluidized bed coal combustion reactor  
[NASA-CASE-NPO-14273-1] c 25 N82-11144
- Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 28 N82-12240
- Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 28 N82-26481

**COATING**

- Method of coating circuit paths on printed circuit boards with solder Patent  
[NASA-CASE-XMF-01599] c 09 N71-20705
- Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875
- Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436
- Selective coating for solar panels — using black chrome and black nickel  
[NASA-CASE-LEW-12159-1] c 44 N78-19599
- Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233
- Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854

**COATINGS**

- Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400
- High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206
- Durable antistatic coating for polymethylmethacrylate  
[NASA-CASE-NPO-13867-1] c 27 N78-14164
- Edge coating of flat wires  
[NASA-CASE-XMF-05757-1] c 31 N79-21227
- Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MS-C-18382-2] c 27 N82-24344

**COAXIAL CABLES**

- Transmission line thermal short Patent  
[NASA-CASE-XNP-09775] c 09 N71-20445
- Coaxial cable connector Patent  
[NASA-CASE-XNP-04732] c 09 N71-20851
- Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597
- Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191
- Vibration isolation system using compression springs  
[NASA-CASE-NPO-11012] c 15 N72-11391
- Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c 15 N73-14469
- System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c 33 N74-17927
- Refrigerated coaxial coupling — for microwave equipment  
[NASA-CASE-NPO-13504-1] c 33 N75-30430
- High power RF coaxial switch  
[NASA-CASE-NPO-14229-1] c 33 N80-18285

**COAXIAL PLASMA ACCELERATORS**

- Self-energized plasma compressor  
[NASA-CASE-MFS-22145-2] c 75 N76-17951

**COBALT ALLOYS**

- High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-00726] c 17 N71-15644
- High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-02991-1] c 17 N71-16025
- High temperature ferromagnetic cobalt-base alloy Patent  
[NASA-CASE-XLE-03629] c 17 N71-23248
- Cobalt-base alloy  
[NASA-CASE-LEW-10438-1] c 17 N73-32415
- Overlay metallic-cermet alloy coating systems — for gas turbine engines  
[NASA-CASE-LEW-13639-1] c 27 N82-33522

**COBALT OXIDES**

- High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206

**COCKPIT SIMULATORS**

- Controlled visibility device for an aircraft Patent  
[NASA-CASE-XFR-04147] c 11 N71-10748

**COCKPITS**

- Aircraft canopy lock  
[NASA-CASE-FRC-11085-1] c 05 N81-24047

**CODERS**

- Encoder/decoder system for a rapidly synchronizable binary code Patent  
[NASA-CASE-NPO-10342] c 10 N71-33407
- Modular encoder  
[NASA-CASE-NPO-10629] c 08 N72-18184
- Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MS-C-14070-1] c 32 N74-32598
- Digital plus analog output encoder  
[NASA-CASE-GSC-12115-1] c 62 N76-31946
- Twin-capacitive shaft angle encoder with analog output signal  
[NASA-CASE-ARC-10897-1] c 33 N77-31404

**CODING**

- Error correcting method and apparatus Patent  
[NASA-CASE-XNP-02748] c 08 N71-22749
- Rate data encoder  
[NASA-CASE-LAR-10128-1] c 08 N73-20217
- Binary concatenated coding system  
[NASA-CASE-MS-C-14082-1] c 60 N76-23850
- Differential pulse code modulation  
[NASA-CASE-MS-C-12506-1] c 32 N77-12239

**COEFFICIENT OF FRICTION**

- Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c 35 N76-31489
- Locking redundant link  
[NASA-CASE-LAR-11900-1] c 37 N79-14382

**COENZYMES**

- Flavin coenzyme assay  
[NASA-CASE-GSC-10565-1] c 06 N72-25149

**COHERENT ELECTROMAGNETIC RADIATION**

- Folded traveling wave maser structure Patent  
[NASA-CASE-XNP-05219] c 16 N71-15550
- Focused image holography with extended sources Patent  
[NASA-CASE-ERC-10019] c 16 N71-15551
- Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N81-12407

**COHERENT LIGHT**

- Hybrid holographic system using reflected and transmitted object beams simultaneously Patent  
[NASA-CASE-MFS-20074] c 16 N71-15565
- Amplitude modulated laser transmitter Patent  
[NASA-CASE-XMS-04269] c 16 N71-22895
- Device for measuring light scattering wherein the measuring beam is successively reflected between a pair of parallel reflectors Patent  
[NASA-CASE-XER-11203] c 14 N71-28994

**COHERENT RADIATION**

- Laser communication system for controlling several functions at a location remote to the laser  
[NASA-CASE-LAR-10311-1] c 16 N73-16536
- Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c 35 N74-11284
- Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c 36 N74-20009
- Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425
- Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c 36 N76-29575
- Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589

**COINCIDENCE CIRCUITS**

- Frequency measurement by coincidence detection with standard frequency  
[NASA-CASE-MS-C-14649-1] c 33 N76-16331

**COLD CATHODES**

- Meteoroid detector  
[NASA-CASE-LAR-10483-1] c 14 N73-32327

**COLD GAS**

- Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071

**COLD WELDING**

- Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455

**COLD WORKING**

- Hydroforming techniques using epoxy molds Patent  
[NASA-CASE-XLE-05641-1] c 15 N71-26346

**COLLAPSE**

- Collapsible pistons  
[NASA-CASE-MS-C-13789-1] c 11 N73-32152

**COLLECTION**

- Automatic liquid inventory collecting and dispensing unit  
[NASA-CASE-LAR-11071-1] c 35 N75-19611
- Urine collection device  
[NASA-CASE-MS-C-16433-1] c 52 N78-27750
- Absorbent product to absorb fluids — for collection of human wastes  
[NASA-CASE-MS-C-18223-1] c 24 N82-29362

**COLLIMATION**

- Long range laser traversing system  
[NASA-CASE-GSC-11262-1] c 36 N74-21091
- Optical alignment device  
[NASA-CASE-ARC-10932-1] c 74 N76-22993
- Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c 36 N77-32478
- Dual acting slit control mechanism  
[NASA-CASE-LAR-11370-1] c 35 N80-28686
- Collimated beam manifold and method for using the same — laser beams  
[NASA-CASE-MFS-25312-1] c 74 N80-34251
- Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N81-19440
- Method for shaping and aiming narrow beams — sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443

**COLLIMATORS**

- X-ray reflection collimator adapted to focus X-radiation directly on a detector Patent  
[NASA-CASE-XHQ-04106] c 14 N70-40240
- Collimator of multiple plates with axially aligned identical random arrays of apertures  
[NASA-CASE-MFS-20546-2] c 14 N73-30389
- Multiplate focusing collimator — for scanning small near radiation sources  
[NASA-CASE-MFS-20932-1] c 35 N75-19616
- Method for shaping and aiming narrow beams — sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443
- Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072

**COLLISION AVOIDANCE**

- Cooperative Doppler radar system Patent  
[NASA-CASE-LAR-10403] c 21 N71-11766
- Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948
- Stacked array of omnidirectional antennas  
[NASA-CASE-LAR-10545-1] c 09 N72-21244
- Display research collision warning system  
[NASA-CASE-HQN-10703] c 21 N73-13643
- Apparatus for aiding a pilot in avoiding a midair collision between aircraft  
[NASA-CASE-LAR-10717-1] c 21 N73-30641
- Satellite aided vehicle avoidance system  
[NASA-CASE-ERC-10419-1] c 03 N75-30132

**COLLOIDAL GENERATORS**

- Colloid propulsion method and apparatus Patent  
[NASA-CASE-XLE-00817] c 28 N70-33265

**COLLOIDAL PROPELLANTS**

- Colloid propulsion method and apparatus Patent  
[NASA-CASE-XLE-00817] c 28 N70-33265
- Low viscosity magnetic fluid obtained by the colloidal suspension of magnetic particles Patent  
[NASA-CASE-XLE-01512] c 12 N70-40124
- Annular slit colloid thruster Patent  
[NASA-CASE-GSC-10709-1] c 28 N71-25213

**COLLOIDS**

- The 2 deg/90 deg laboratory scattering photometer — particulate refractivity in hydrosols  
[NASA-CASE-GSC-12088-1] c 74 N78-13874

**COLOR**

- Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446
- Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059

**COLOR PHOTOGRAPHY**

- Method of recording a gas flow pattern Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815
- Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432

**COLOR TELEVISION**

- Color television systems using a single gun color cathode ray tube Patent  
[NASA-CASE-ERC-10098] c 09 N71-28618
- Color television system  
[NASA-CASE-MS-C-12146-1] c 07 N72-17109
- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-1] c 07 N73-22076
- Scan converting video tape recorder  
[NASA-CASE-NPO-10168-2] c 35 N76-16391
- System for producing chroma signals  
[NASA-CASE-MS-C-14683-1] c 74 N77-18893
- Full color hybrid display for aircraft simulators — landing aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083

**COLOR VISION**

- Color perception tester  
[NASA-CASE-KSC-10278] c 05 N72-16015



## COLUMNS

- Lightweight structural columns --- space erectable trusses  
[NASA-CASE-LAR-12095-1] c 31 N81-25258
- COLUMNS (PROCESS ENGINEERING)**  
Micropacked column for a chromatographic system  
[NASA-CASE-XNP-04816] c 06 N69-39936
- COLUMNS (SUPPORTS)**  
Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N81-12283  
Telescoping columns --- parabolic antenna support  
[NASA-CASE-LAR-12195-1] c 31 N81-27324  
Self-locking mechanical center joint --- for space construction  
[NASA-CASE-LAR-12864-1] c 37 N82-29606
- COMBINATORIAL ANALYSIS**  
Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437
- COMBUSTION**  
Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484
- COMBUSTION CHAMBERS**  
Rocket chamber leak test fixture  
[NASA-CASE-XFR-09479] c 14 N69-27503  
Rocket propellant injector Patent  
[NASA-CASE-XLE-00103] c 28 N70-33241  
Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411  
Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535  
Ignition system for monopropellant combustion devices Patent  
[NASA-CASE-XNP-00249] c 28 N70-38249  
Method of making a regeneratively cooled combustion chamber Patent  
[NASA-CASE-XLE-00150] c 28 N70-41818  
Control of transverse instability in rocket combustors Patent  
[NASA-CASE-XLE-04603] c 33 N71-21507  
Combustion chamber Patent  
[NASA-CASE-XLE-04857] c 28 N71-23968  
Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736  
Coaxial injector for reaction motors  
[NASA-CASE-NPO-11095] c 15 N72-25455  
Swirl can primary combustor  
[NASA-CASE-LEW-11326-1] c 23 N73-30665  
Method of electroforming a rocket chamber  
[NASA-CASE-LEW-11118-1] c 20 N74-32919  
Controlled separation combustor --- airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c 20 N76-14190  
Fuel combustor  
[NASA-CASE-LEW-12137-1] c 25 N78-10224  
Direct heating surface combustor  
[NASA-CASE-LEW-11877-1] c 34 N78-27357  
Combustor --- low nitrogen oxide formation  
[NASA-CASE-NPO-13958-1] c 25 N79-11151  
Heat exchanger --- rocket combustion chambers and cooling systems  
[NASA-CASE-LEW-12252-1] c 34 N79-13288  
General purpose rocket furnace  
[NASA-CASE-MFS-23460-1] c 12 N78-26075  
Reduction of nitric oxide emissions from a combustor  
[NASA-CASE-ARC-10814-2] c 07 N80-26298  
Diesel engine catalytic combustor system --- turbocharging  
[NASA-CASE-LEW-12995-1] c 37 N80-26659  
Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 25 N81-19245  
Fluidized bed coal combustion reactor  
[NASA-CASE-NPO-14273-1] c 25 N82-11144  
Micronized coal burner facility  
[NASA-CASE-LEW-13426-1] c 44 N82-31769
- COMBUSTION CONTROL**  
Burning rate control of solid propellants Patent  
[NASA-CASE-XLE-03494] c 27 N71-21819
- COMBUSTION EFFICIENCY**  
Rocket engine injector Patent  
[NASA-CASE-XLE-00111] c 28 N70-38199
- COMBUSTION PHYSICS**  
Solid propellant rocket motor  
[NASA-CASE-NPO-11559] c 28 N73-24784  
Plasma igniter for internal combustion engine  
[NASA-CASE-NPO-13828-1] c 37 N79-11405
- COMBUSTION PRODUCTS**  
Separation unit Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922  
Combustion products generating and metering device  
[NASA-CASE-GSC-11095-1] c 14 N72-10375  
System for minimizing internal combustion engine pollution emission  
[NASA-CASE-NPO-13402-1] c 37 N76-18457  
Coal desulfurization process  
[NASA-CASE-NPO-13937-1] c 44 N78-31527

- Combustor --- low nitrogen oxide formation  
[NASA-CASE-NPO-13958-1] c 25 N79-11151
- COMBUSTION STABILITY**  
Control of transverse instability in rocket combustors Patent  
[NASA-CASE-XLE-04603] c 33 N71-21507
- COMET TAILS**  
Ion mass spectrometer --- exploring comet tails  
[NASA-CASE-NPO-15423-1] c 91 N82-25042
- COMFORT**  
Ride quality meter  
[NASA-CASE-LAR-12882-1] c 54 N81-31848
- COMMAND AND CONTROL**  
Multiple rate digital command detection system with range clean-up capability  
[NASA-CASE-NPO-13753-1] c 32 N77-20289  
Common data buffer system --- communication with computational equipment utilized in spacecraft operations  
[NASA-CASE-KSC-11048-1] c 62 N81-24779
- COMMAND MODULES**  
Low onset rate energy absorber  
[NASA-CASE-MS-C-12279] c 15 N72-17450
- COMMUNICATING**  
Communications link for computers  
[NASA-CASE-NPO-11161] c 08 N72-25207
- COMMUNICATION**  
Correlation function apparatus Patent  
[NASA-CASE-XNP-00746] c 07 N71-21476  
System for improving signal-to-noise ratio of a communication signal  
[NASA-CASE-MS-C-12259-2] c 07 N72-33146
- COMMUNICATION CABLES**  
Method of making a molded connector Patent  
[NASA-CASE-XMF-03498] c 15 N71-15986  
Process for making RF shielded cable connector assemblies and the products formed thereby  
[NASA-CASE-GSC-11215-1] c 09 N73-28083  
Fiber distributed feedback laser  
[NASA-CASE-NPO-13531-1] c 36 N76-24553  
High-speed data link for moderate distances and noisy environments  
[NASA-CASE-NPO-14152-1] c 32 N80-18252  
High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272
- COMMUNICATION EQUIPMENT**  
Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c 07 N71-20814  
Decoder system Patent  
[NASA-CASE-NPO-10118] c 07 N71-24741  
Data-aided carrier tracking loops  
[NASA-CASE-NPO-11282] c 10 N73-16205  
Doppler compensation by shifting transmitted object frequency within limits  
[NASA-CASE-GSC-10087-4] c 07 N73-20174  
Differential phase shift keyed communication system  
[NASA-CASE-MS-C-14065-1] c 32 N74-26654
- COMMUNICATION SATELLITES**  
Passive communication satellite Patent  
[NASA-CASE-XLA-00210] c 30 N70-40309  
Apparatus providing a directive field pattern and attitude sensing of a spin stabilized satellite Patent  
[NASA-CASE-XGS-02607] c 31 N71-23009  
Deep space monitor communication satellite system Patent  
[NASA-CASE-XAC-06029-1] c 31 N71-24813  
Satellite communication system Patent  
[NASA-CASE-GSC-02389] c 07 N71-28900  
Satellite aided vehicle avoidance system  
[NASA-CASE-ERC-10419-1] c 03 N75-30132  
Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323
- COMMUTATION**  
High speed low level electrical stepping switch Patent  
[NASA-CASE-XAC-00060] c 09 N70-39915  
Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393
- COMMUTATORS**  
Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432  
Current steering commutator  
[NASA-CASE-NPO-10743] c 08 N72-21199
- COMPARATOR CIRCUITS**  
Digital frequency discriminator Patent  
[NASA-CASE-MFS-14322] c 08 N71-18692  
Pulsed differential comparator circuit Patent  
[NASA-CASE-XLE-03804] c 10 N71-19471  
Multi-cell battery protection system  
[NASA-CASE-LEW-12039-1] c 44 N78-14625  
Window comparator  
[NASA-CASE-FRC-10090-1] c 33 N78-18308

## COMPARATORS

- Fluid flow meter with comparator reference means Patent  
[NASA-CASE-XGS-01331] c 14 N71-22996  
Comparator for the comparison of two binary numbers Patent  
[NASA-CASE-XNP-04819] c 08 N71-23295  
High stability buffered phase comparator  
[NASA-CASE-GSC-12645-1] c 33 N81-31482
- COMPENSATORS**  
Star image motion compensator  
[NASA-CASE-LAR-10523-1] c 14 N72-22444  
Thermal compensator for closed-cycle helium refrigerator --- assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029  
Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N81-22358
- COMPLEX COMPOUNDS**  
Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174
- COMPOSITE MATERIALS**  
Reinforced metallic composites Patent  
[NASA-CASE-XLE-02428] c 17 N70-33288  
Method of making fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-00231] c 17 N70-38198  
Reinforced metallic composites Patent  
[NASA-CASE-XLE-00228] c 17 N70-38490  
Unfired-ceramic flame-resistant insulation and method of making the same Patent  
[NASA-CASE-XMF-01030] c 18 N70-41583  
Process of casting heavy slips Patent  
[NASA-CASE-XLE-00106] c 15 N71-16076  
Lightweight refractory insulation and method of preparing the same Patent  
[NASA-CASE-XMF-05279] c 18 N71-16124  
Flexible composite membrane Patent  
[NASA-CASE-NPO-08837] c 18 N71-16210  
Low temperature flexure fatigue cryostat Patent  
[NASA-CASE-XMF-02964] c 14 N71-17659  
Method for producing fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-03925] c 18 N71-22894  
Solar cell matrix  
[NASA-CASE-NPO-11190] c 03 N71-34044  
Method of forming shapes from planar sheets of thermosetting materials  
[NASA-CASE-NPO-11036] c 15 N72-24522  
Method of making fiber composites  
[NASA-CASE-LEW-10424-2-2] c 18 N72-25539  
Thermal compensating structural member  
[NASA-CASE-MFS-20433] c 15 N72-28496  
Bearing material --- composite material with low friction surface for rolling or sliding contact  
[NASA-CASE-LEW-11930-1] c 24 N76-22309  
Fluid seal for rotating shafts  
[NASA-CASE-LEW-11676-1] c 37 N76-22541  
Non-flammable elastomeric fiber from a fluorinated elastomer and containing an halogenated flame retardant  
[NASA-CASE-MS-C-14331-1] c 27 N76-24405  
Method of growing composites of the type exhibiting the Soret effect --- improved structure of eutectic alloy crystals  
[NASA-CASE-MFS-22926-1] c 24 N77-27187  
Hybrid composite laminate structures  
[NASA-CASE-LEW-12118-1] c 24 N77-27188  
Honeycomb-laminate composite structure  
[NASA-CASE-ARC-10913-1] c 24 N78-15180  
High temperature resistant cement and ceramic compositions --- for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302  
Molded composite pyrogen igniter for rocket motors --- solid propellant igniter  
[NASA-CASE-LAR-12018-1] c 20 N78-24275  
Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-1] c 28 N78-24365  
Method of making bearing materials --- self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11930-4] c 24 N79-17916  
Composite seal for turbomachinery --- backings for turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318  
Crystalline polyamides --- reinforcing fibers for high temperature composites and adhesives as well as flame retardation  
[NASA-CASE-LAR-12099-1] c 27 N80-16158  
Cork-resin ablative insulation for complex surfaces and method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388  
Method of making bearing material  
[NASA-CASE-LEW-11930-3] c 24 N80-33482



Tackifier for addition polyimides containing monoethylphthalate  
[NASA-CASE-LAR-12642-1] c 27 N81-29229

Elastomer toughened polyimide adhesives  
[NASA-CASE-LAR-12775-1] c 27 N82-25384

**COMPOSITE PROPELLANTS**  
Ammonium perchlorate composite propellant containing an organic transitional metal chelate catalytic additive Patent  
[NASA-CASE-LAR-10173-1] c 27 N71-14090

Silicone containing solid propellant  
[NASA-CASE-NPO-14477-1] c 28 N80-28536

Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

**COMPOSITE STRUCTURES**  
Inflatable honeycomb Patent  
[NASA-CASE-XLA-00204] c 32 N70-36536

Composite powerplant and shroud therefor Patent  
[NASA-CASE-XLA-01043] c 28 N71-10780

Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260

Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170

Composite sandwich lattice structure  
[NASA-CASE-LAR-11898-1] c 24 N78-10214

Method of making a composite sandwich lattice structure  
[NASA-CASE-LAR-11898-2] c 24 N78-17149

Low density bismaleimide-carbon microballoon composites --- aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184

Aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-3] c 44 N80-16452

Lightweight structural columns --- space erectable trusses  
[NASA-CASE-LAR-12095-1] c 31 N81-25258

Graphite/polyimide structural applications  
[NASA-CASE-LAR-12547-1] c 24 N82-25324

**COMPOSITION (PROPERTY)**  
Moving particle composition analyzer  
[NASA-CASE-GSC-11889-1] c 35 N76-16393

**COMPRESSED AIR**  
Valve actuator Patent  
[NASA-CASE-XHQ-01208] c 15 N70-35409

**COMPRESSIBILITY**  
Nozzle extraction process and handmeter for measuring handle  
[NASA-CASE-LAR-12147-1] c 31 N79-11246

**COMPRESSIBLE FLUIDS**  
Apparatus having coaxial capacitor structure for measuring fluid density Patent  
[NASA-CASE-XLE-00143] c 14 N70-36618

Apparatus for tensile testing Patent  
[NASA-CASE-XKS-06250] c 14 N71-15600

**COMPRESSING**  
Refrigeration apparatus Patent  
[NASA-CASE-XNP-08877] c 15 N71-23025

Method for compression molding of thermosetting plastics utilizing a temperature gradient across the plastic to cure the article  
[NASA-CASE-LAR-10489-1] c 31 N74-18124

**COMPRESSION LOADS**  
Pressure transducer  
[NASA-CASE-NPO-10832] c 14 N72-21405

Solid medium thermal engine  
[NASA-CASE-ARC-10461-1] c 44 N74-33379

Locking redundant link  
[NASA-CASE-LAR-11900-1] c 37 N79-14382

Fixture for environmental exposure of structural materials under compression  
[NASA-CASE-LAR-12602-1] c 35 N81-19429

**COMPRESSION RATIO**  
Automatic compression adjusting mechanism for internal combustion engines  
[NASA-CASE-MSC-18807-1] c 37 N81-29442

**COMPRESSION TESTS**  
Compression test assembly  
[NASA-CASE-LAR-10440-1] c 14 N73-32323

Anti-buckling fatigue test assembly --- for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c 09 N74-19528

Compression test fixture  
[NASA-CASE-MSC-18723-1] c 39 N81-24470

**COMPRESSOR BLADES**  
Welding blades to rotors  
[NASA-CASE-LEW-10533-1] c 15 N73-28515

**COMPRESSOR ROTORS**  
Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366

**COMPRESSORS**  
Thermal pump-compressor for space use Patent  
[NASA-CASE-XLA-00377] c 33 N71-17610

Self-energized plasma compressor  
[NASA-CASE-MFS-22145-2] c 75 N76-17951

Gas compression apparatus  
[NASA-CASE-MSC-14757-1] c 35 N78-10428

Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658

A cycling Joule Thomson refrigerator  
[NASA-CASE-NPO-15251-1] c 31 N81-19344

**COMPUTATION**  
Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437

Rule for making navigational computations  
[NASA-CASE-XNP-01458] c 04 N78-17031

**COMPUTER COMPONENTS**  
Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897

Binary to binary coded decimal converter  
[NASA-CASE-GSC-12044-1] c 60 N78-17691

Memory-based parallel data output controller  
[NASA-CASE-GSC-12447-1] c 60 N80-21987

Computer circuit card puller  
[NASA-CASE-FRC-11042-1] c 60 N82-24839

Control means for a solid state crossbar switch  
[NASA-CASE-NPO-15066-1] c 33 N82-29538

**COMPUTER DESIGN**  
Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-1] c 60 N77-14751

**COMPUTER GRAPHICS**  
System for quantizing graphic displays  
[NASA-CASE-NPO-10745] c 08 N72-22164

**COMPUTER NETWORKS**  
High-speed data link for moderate distances and noisy environments  
[NASA-CASE-NPO-14152-1] c 32 N80-18252

Common data buffer system --- communication with computational equipment utilized in spacecraft operations  
[NASA-CASE-KSC-11048-1] c 62 N81-24779

**COMPUTER PROGRAMMING**  
Minimal logic block encoder Patent  
[NASA-CASE-NPO-10595] c 10 N71-25917

Priority interrupt system --- comprised of four registers  
[NASA-CASE-NPO-13067-1] c 60 N76-18800

**COMPUTER PROGRAMS**  
Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633

Program for computer aided reliability estimation  
[NASA-CASE-NPO-13086-1] c 15 N73-12495

Numerical computer peripheral interactive device with manual controls  
[NASA-CASE-NPO-11497] c 08 N73-25206

**COMPUTER STORAGE DEVICES**  
Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c 08 N71-12504

Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c 08 N71-12505

Pulse-type magnetic core memory element circuit with blocking oscillator feedback Patent  
[NASA-CASE-XGS-03303] c 08 N71-18595

Drive circuit utilizing two cores Patent  
[NASA-CASE-XNP-01318] c 10 N71-23033

Programmable telemetry system Patent  
[NASA-CASE-GSC-10131-1] c 07 N71-24624

Serial digital decoder Patent  
[NASA-CASE-NPO-10150] c 08 N71-24650

Digital memory in which the driving of each word location is controlled by a switch core Patent  
[NASA-CASE-XNP-01466] c 10 N71-26434

Redundant memory organization Patent  
[NASA-CASE-GSC-10564] c 10 N71-29135

Semiconductor-ferroelectric memory device  
[NASA-CASE-ERC-10307] c 08 N72-21198

Shared memory for a fault-tolerant computer  
[NASA-CASE-NPO-13139-1] c 60 N76-21914

Automatic multi-banking of memory for microprocessors  
[NASA-CASE-NPO-15295-1] c 60 N82-11785

**COMPUTER SYSTEMS DESIGN**  
Adaptive voting computer system  
[NASA-CASE-MSC-13932-1] c 62 N74-14920

Computer interface system  
[NASA-CASE-NPO-13428-1] c 60 N77-12721

**COMPUTER TECHNIQUES**  
Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c 25 N76-18245

Apparatus for determining thermophysical properties of test specimens  
[NASA-CASE-LAR-11883-1] c 09 N77-27131

Computerized system for translating a torch head  
[NASA-CASE-MFS-23620-1] c 37 N79-10421

Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402

**COMPUTERIZED SIMULATION**

Integrated time shared instrumentation display Patent  
[NASA-CASE-XLA-01952] c 08 N71-12507

Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411

Simulator method and apparatus for practicing the mating of an observer-controlled object with a target  
[NASA-CASE-MFS-23052-2] c 74 N79-13855

Inflight IFR procedures simulator  
[NASA-CASE-KSC-11218-1] c 09 N82-29331

**COMPUTERS**  
Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333

Data compression processor Patent  
[NASA-CASE-NPO-10068] c 08 N71-19288

Communications link for computers  
[NASA-CASE-NPO-11161] c 08 N72-25207

**CONCAVITY**  
Concave grating spectrometer Patent  
[NASA-CASE-XGS-01036] c 14 N70-40003

**CONCENTRATORS**  
Device for directionally controlling electromagnetic radiation Patent  
[NASA-CASE-XLE-01716] c 09 N70-40234

Thermostatically controlled non-tracking type solar energy concentrator  
[NASA-CASE-NPO-13497-1] c 44 N76-14602

Three-dimensional tracking solar energy concentrator and method for making same  
[NASA-CASE-NPO-13736-1] c 44 N77-32583

Non-tracking solar energy collector system  
[NASA-CASE-NPO-13817-1] c 44 N79-11471

Solar cell module  
[NASA-CASE-NPO-14467-1] c 44 N79-31753

Solar concentrator  
[NASA-CASE-MFS-23727-1] c 44 N80-14473

Solar energy receiver for a Stirling engine  
[NASA-CASE-NPO-14619-1] c 44 N81-17518

**CONCENTRIC SPHERES**  
Method and apparatus for producing concentric hollow spheres --- inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319

Method and apparatus for producing concentric hollow spheres --- for nuclear fusion by inertial confinement  
[NASA-CASE-NPO-14596-2] c 31 N82-25401

Method and apparatus for producing concentric hollow spheres  
[NASA-CASE-NPO-14596-3] c 27 N82-26461

**CONDENSATES**  
Apparatus for testing polymers Patent  
[NASA-CASE-XNP-09699] c 06 N71-24607

Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c 77 N75-20139

**CONDENSERS (LIQUEFIERS)**  
Condenser - Separator  
[NASA-CASE-XLA-08645] c 15 N69-21465

Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c 77 N75-20139

**CONDENSING**  
Preparation of heterocyclic block copolymer omega-diamidoximes  
[NASA-CASE-ARC-11060-1] c 27 N79-22300

**CONDUCTING FLUIDS**  
Multiducted electromagnetic pump Patent  
[NASA-CASE-NPO-10755] c 15 N71-27084

Internally supported flexible duct joint --- device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c 37 N75-19686

**CONDUCTIVE HEAT TRANSFER**  
Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c 14 N70-34156

Space suit heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439

Compact pulsed laser having improved heat conductance  
[NASA-CASE-NPO-13147-1] c 36 N77-25502

Automatic thermal switch  
[NASA-CASE-GSC-12553-1] c 33 N80-21671

Automatic thermal switch  
[NASA-CASE-GSC-12415-1] c 33 N82-24419

**CONDUCTORS**  
Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701

Method for making conductors for ferrite memory arrays --- from pre-formed metal conductors  
[NASA-CASE-LAR-10994-1] c 24 N75-13032

**CONES**  
Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475

**CONFINEMENT**  
Observation window for a gas confining chamber  
[NASA-CASE-NPO-10890] c 11 N73-12265



## CONICAL BODIES

- Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859
- Conical reflector antenna  
[NASA-CASE-NPO-10303] c 07 N72-22127
- Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130

## CONICAL SCANNING

- Conical scan tracking system employing a large antenna  
[NASA-CASE-NPO-14009-1] c 32 N79-13214

## CONICAL SHELLS

- Device for determining the accuracy of the flare on a flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785
- Foldable solar concentrator Patent  
[NASA-CASE-XLA-04622] c 03 N70-41580
- Apparatus for machining geometric cones Patent  
[NASA-CASE-XMS-04292] c 15 N71-22722

## CONJUGATES

- Phase conjugation method and apparatus for an active retrodirective antenna array  
[NASA-CASE-NPO-13641-1] c 32 N79-24210

## CONNECTORS

- Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c 03 N69-21539
- Quick release connector Patent  
[NASA-CASE-XLA-01141] c 15 N71-13789
- Flared tube strainer  
[NASA-CASE-XLA-05056] c 15 N72-11389
- Process for making RF shielded cable connector assemblies and the products formed thereby  
[NASA-CASE-GSC-11215-1] c 09 N73-28083
- Low heat leak connector for cryogenic system  
[NASA-CASE-XLE-02367-1] c 31 N79-21225

## CONSCIOUSNESS

- EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MS-13282-1] c 05 N71-24729

## CONSISTENCY

- Improved constant-output atomizer  
[NASA-CASE-MFS-25631-1] c 34 N82-10360

## CONSOLES

- Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310

## CONSTANTS

- Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c 35 N77-18417

## CONSTRAINTS

- Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694
- Cable restraint  
[NASA-CASE-LAR-10129-1] c 15 N73-25512
- Restraint system for ergometer  
[NASA-CASE-MFS-21046-1] c 14 N73-27377
- Reefing system  
[NASA-CASE-LAR-10129-2] c 37 N74-20063
- Restraining mechanism  
[NASA-CASE-MS-13054] c 54 N78-17677
- Spine immobilization apparatus  
[NASA-CASE-ARC-11187-1] c 52 N81-25662

## CONSTRUCTION

- Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N81-12283

## CONSTRUCTION MATERIALS

- Foldable construction block  
[NASA-CASE-MS-12233-1] c 15 N72-25454
- Foldable construction block  
[NASA-CASE-MS-12233-2] c 32 N73-13921

## CONTACT POTENTIALS

- Ionospheric battery Patent  
[NASA-CASE-XGS-01593] c 03 N70-35408

## CONTAINERLESS MELTS

- Method of crystallization --- in gravity-free environments  
[NASA-CASE-MFS-23001-1] c 76 N77-32919
- Containerless melting and rapid solidification apparatus and method  
[NASA-CASE-MFS-25305-1] c 35 N81-16427
- Method and apparatus for supercooling and solidifying substances --- containerless melts and space processing  
[NASA-CASE-MFS-25242-1] c 35 N81-24413
- Gas levitator and method for containerless processing  
[NASA-CASE-MFS-25509-1] c 34 N82-10359

## CONTAINERS

- Fluid containers and resealable septum therefor Patent  
[NASA-CASE-NPO-10123] c 15 N71-24835
- Method for detecting leaks in hermetically sealed containers Patent  
[NASA-CASE-ERC-10045] c 15 N71-24910
- Apparatus for detecting the amount of material in a resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397

## CONTAINMENT

- Hemispherical latching apparatus for payload retention  
[NASA-CASE-MFS-25837] c 16 N82-31398

## CONTAMINANTS

- Apparatus for purging systems handling toxic, corrosive, noxious and other fluids Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089
- Moisture content and gas sampling device --- to test hermetically sealed electronic equipment  
[NASA-CASE-MS-18866-1] c 35 N82-26634

## CONTAMINATION

- Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871
- Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922
- Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372
- Bacterial contamination monitor  
[NASA-CASE-GSC-10879-1] c 14 N72-25413
- Biocontamination and particulate detection system  
[NASA-CASE-NPO-13953-1] c 35 N79-28527

## CONTINUOUS RADIATION

- CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512
- Pseudo continuous wave instrument --- ultrasonics  
[NASA-CASE-LAR-12260-1] c 35 N79-10390
- Low-frequency radio navigation system  
[NASA-CASE-NPO-15264-1] c 04 N81-22036

## CONTINUOUS WAVE LASERS

- High power laser apparatus and system  
[NASA-CASE-XLE-25229-2] c 36 N75-27364
- Continuous plasma laser --- method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma  
[NASA-CASE-XNP-04167-3] c 36 N77-19416
- Stark effect spectrophone for continuous absorption spectra monitoring --- a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159
- Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589

## CONTINUOUS WAVE RADAR

- Phase-locked loop with sideband rejecting properties Patent  
[NASA-CASE-XNP-02723] c 07 N70-41680
- FM/CW radar system  
[NASA-CASE-MFS-22234-1] c 32 N79-10264

## CONTOURS

- Contour surveying system Patent  
[NASA-CASE-XLA-08646] c 14 N71-17586
- Contourograph system for monitoring electrocardiograms  
[NASA-CASE-MS-13407-1] c 10 N72-20225
- Variable contour securing system  
[NASA-CASE-MS-16270-1] c 37 N78-27423
- Device for measuring the contour of a surface  
[NASA-CASE-LAR-11869-1] c 74 N78-27904
- Contour detector and data acquisition system for the left ventricular outline  
[NASA-CASE-ARC-10985-1] c 52 N79-10724
- Contour measurement system  
[NASA-CASE-MFS-23726-1] c 43 N79-26439
- Cork-resin ablative insulation for complex surfaces and method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388
- Surface conforming thermal/pressure seal --- tail assemblies of space shuttle orbiters  
[NASA-CASE-MS-18422-1] c 37 N82-16408

## CONTROL

- Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191
- Apparatus for testing a pressure responsive instrument Patent  
[NASA-CASE-XMF-04134] c 14 N71-23755
- Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175
- Power factor control system for ac induction motors  
[NASA-CASE-MFS-23988-1] c 33 N81-27395
- Television camera video level control system --- space shuttle orbiters  
[NASA-CASE-MS-18578-1] c 74 N82-27121
- Control means for a solid state crossbar switch  
[NASA-CASE-NPO-15066-1] c 33 N82-29538

## CONTROL BOARDS

- Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090

## CONTROL DATA (COMPUTERS)

- Computer interface system  
[NASA-CASE-NPO-13428-1] c 60 N77-12721

## CONTROL EQUIPMENT

- Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c 10 N71-18772

- Drift compensation circuit for analog to digital converter Patent  
[NASA-CASE-XNP-04780] c 08 N71-19687
- Attitude controls for VTOL aircraft Patent  
[NASA-CASE-XAC-08972] c 02 N71-20570
- Control device Patent  
[NASA-CASE-XAC-10019] c 15 N71-23809
- Controlled release device Patent  
[NASA-CASE-XKS-03338] c 15 N71-24043
- Dual polarity full wave dc motor drive Patent  
[NASA-CASE-XNP-07477] c 09 N71-26092
- Digital memory in which the driving of each word location is controlled by a switch core Patent  
[NASA-CASE-XNP-01466] c 10 N71-26434
- Fluid jet amplifier Patent  
[NASA-CASE-XLE-09341] c 12 N71-28741
- System for controlling the operation of a variable signal device  
[NASA-CASE-NPO-11064] c 07 N72-11150
- Solid state remote circuit selector switch  
[NASA-CASE-LEW-10387] c 09 N72-22201
- Synchronous orbit battery cyclor  
[NASA-CASE-GSC-11211-1] c 03 N72-25020
- Infinite range electronics gain control circuit  
[NASA-CASE-GSC-10786-1] c 10 N72-28241
- Interferometric rotation sensor  
[NASA-CASE-ARC-10278-1] c 14 N73-25463
- Digital controller for a Baum folding machine --- providing automatic counting and machine shutoff  
[NASA-CASE-LAR-10688-1] c 37 N74-21056
- Flow control valve --- for high temperature fluids  
[NASA-CASE-NPO-11951-1] c 37 N74-21065
- Variable ratio mixed-mode bilateral master-slave control system for shuttle remote manipulator system  
[NASA-CASE-MS-14245-1] c 18 N75-27041
- Anthropomorphic master/slave manipulator system  
[NASA-CASE-ARC-10756-1] c 54 N77-32721
- Power factor control system for AC induction motors  
[NASA-CASE-MFS-23280-1] c 33 N78-10376
- Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384
- Control for nuclear thermionic power source  
[NASA-CASE-NPO-13114-2] c 73 N78-28913
- Illumination control apparatus for compensating solar light  
[NASA-CASE-KSC-11010-1] c 74 N79-12890
- Dual acting slit control mechanism  
[NASA-CASE-LAR-11370-1] c 35 N80-28686
- Pneumatic inflatable end effector  
[NASA-CASE-MFS-23696-1] c 54 N81-26718
- Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N81-33449
- Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279

## CONTROL ROCKETS

- Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504

## CONTROL RODS

- Null device for hand controller Patent  
[NASA-CASE-XLA-01808] c 15 N71-20740

## CONTROL SIMULATION

- Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806

## CONTROL STABILITY

- Apparatus for sensor failure detection and correction in a gas turbine engine control system  
[NASA-CASE-LEW-12907-2] c 07 N81-19115
- Apparatus for damping operator induced oscillations of a controlled system --- flight control  
[NASA-CASE-FRC-11041-1] c 33 N82-18493

## CONTROL SURFACES

- Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859
- Attitude control for spacecraft Patent  
[NASA-CASE-XNP-02982] c 31 N70-41855
- Vortex-lift roll-control device  
[NASA-CASE-LAR-11868-2] c 08 N79-14108
- Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968
- Thermal barrier pressure seal --- shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MS-18134-1] c 37 N81-15363

## CONTROL UNITS (COMPUTERS)

- Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633

## CONTROL VALVES

- Electromechanical actuator  
[NASA-CASE-XNP-05975] c 15 N69-23185
- Full flow with shut off and selective drainage control valve Patent application  
[NASA-CASE-ERC-10208] c 15 N70-10867
- Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859
- Control valve and co-axial variable injector Patent  
[NASA-CASE-XNP-09702] c 15 N71-17654



- Electrohydrodynamic control valve Patent  
[NASA-CASE-NPO-10416] c 12 N71-27332
- Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c 15 N71-27432
- Dual stage check valve  
[NASA-CASE-MSC-13587-1] c 15 N73-30459
- Airflow control system for supersonic inlets  
[NASA-CASE-LEW-11188-1] c 02 N74-20646
- Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c 37 N75-25185
- Pressure modulating valve  
[NASA-CASE-MSC-14905-1] c 37 N77-28487
- Fluid valve assembly  
[NASA-CASE-MSC-12731-1] c 37 N78-25426
- Flow diverter valve and flow diversion method  
[NASA-CASE-HQN-00573-1] c 37 N79-33468
- Quartz ball valve  
[NASA-CASE-NPO-14473-1] c 37 N80-23654
- Pressure control valve — inflating flexible bladders  
[NASA-CASE-ARC-11251-1] c 37 N81-17433
- Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483
- Method and system for nuclear waste disposal — control valves for encapsulating wastes  
[NASA-CASE-NPO-15454-1] c 73 N82-12916
- Slow opening valve  
[NASA-CASE-MSC-20112-1] c 37 N82-28641
- CONTROLLED ATMOSPHERES**
- Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c 09 N70-20737
- High voltage pulse generator Patent  
[NASA-CASE-MSC-12178-1] c 09 N71-13518
- Exposure system for animals Patent  
[NASA-CASE-XAC-05333] c 11 N71-22875
- Method and apparatus for growth of crystals by pressure reduction of supercritical or subcritical solution  
[NASA-CASE-NPO-15772-1] c 76 N82-23031
- CONTROLLERS**
- Three axis controller Patent  
[NASA-CASE-XFR-00181] c 21 N70-33279
- Two-axis controller Patent  
[NASA-CASE-XFR-04104] c 03 N70-42073
- Controllers Patent  
[NASA-CASE-XMS-07487] c 15 N71-23255
- Solid state controller three axes controller  
[NASA-CASE-MSC-12394-1] c 08 N74-10942
- Wide power range microwave feedback controller  
[NASA-CASE-GSC-12146-1] c 33 N78-32340
- Active nutation controller  
[NASA-CASE-GSC-12273-1] c 35 N80-21719
- Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432
- Controller for computer control of brushless dc motors — automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352
- Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N81-33449
- Motor power factor controller with a reduced voltage starter  
[NASA-CASE-MFS-25586-1] c 33 N82-11360
- Tnac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N82-26574
- CONVECTIVE FLOW**
- Geysing inhibitor for vertical cryogenic transfer pipe  
[NASA-CASE-KSC-10615] c 15 N73-12486
- CONVECTIVE HEAT TRANSFER**
- Thin film gauge — for measuring convective heat transfer rates along test surfaces in wind tunnels  
[NASA-CASE-NPO-10617-1] c 35 N74-22095
- CONVERGENCE**
- Shock wave convergence apparatus  
[NASA-CASE-MFS-20890] c 14 N72-22439
- CONVERGENT NOZZLES**
- Nozzle extraction process and handmeter for measuring handle  
[NASA-CASE-LAR-12147-1] c 31 N79-11246
- CONVERGENT-DIVERGENT NOZZLES**
- Gimballed, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c 28 N70-34162
- Combustion chamber Patent  
[NASA-CASE-XLE-04857] c 28 N71-23968
- Aircraft engine nozzle  
[NASA-CASE-ARC-10977-1] c 07 N80-32392
- Wind tunnel supplementary Mach number minimum section insert  
[NASA-CASE-LAR-12532-1] c 09 N82-11088
- CONVERTERS**
- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c 35 N76-16391
- CONVEYORS**
- System and method for refurbishing and processing parachutes — monorail conveyor system  
[NASA-CASE-KSC-11042-2] c 02 N81-26073
- Static continuous electrophoresis device  
[NASA-CASE-MFS-25306-1] c 25 N82-11147
- Acoustic system for material transport  
[NASA-CASE-NPO-15453-1] c 71 N82-12889
- Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330
- COOLERS**
- Radiative cooler  
[NASA-CASE-NPO-15465-1] c 18 N82-10106
- Stirling cycle cryogenic cooler — magnetically suspended pistons  
[NASA-CASE-GSC-12697-1] c 31 N82-11312
- COOLING**
- Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486
- Voltage regulator with plural parallel power source sections Patent  
[NASA-CASE-GSC-10891-1] c 10 N71-26626
- Laser coolant and ultraviolet filter  
[NASA-CASE-MFS-20180] c 16 N72-12440
- Compact pulsed laser having improved heat conductance  
[NASA-CASE-NPO-13147-1] c 36 N77-25502
- Heating and cooling system — for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 39 N80-25693
- Heat pipe cooled probe  
[NASA-CASE-LAR-12588-1] c 44 N81-24525
- COOLING SYSTEMS**
- Automatic thermal switch Patent  
[NASA-CASE-XNP-03796] c 23 N71-15467
- Differential temperature transducer Patent  
[NASA-CASE-XAC-00812] c 14 N71-15598
- Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114-2] c 09 N71-24807
- Cryogenic cooling system Patent  
[NASA-CASE-NPO-10467] c 23 N71-26654
- Self-adjusting multisegment, deployable, natural circulation radiator Patent  
[NASA-CASE-XHQ-03673] c 33 N71-29046
- Heat conductive resiliently compressible structure for space electronics package modules Patent  
[NASA-CASE-MSC-12389] c 33 N71-29052
- Method and device for cooling Patent  
[NASA-CASE-HQN-00938] c 33 N71-29053
- Liquid spray cooling method Patent  
[NASA-CASE-XLE-00027] c 33 N71-29152
- Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948
- Light shield and cooling apparatus — high intensity ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c 34 N74-23066
- Refrigerated coaxial coupling — for microwave equipment  
[NASA-CASE-NPO-13504-1] c 33 N75-30430
- Rocket chamber and method of making  
[NASA-CASE-LEW-11118-2] c 20 N76-14191
- Tubular sublimatory evaporator heat sink  
[NASA-CASE-ARC-10912-1] c 34 N77-19353
- Arc control in compact arc lamps  
[NASA-CASE-NPO-10870-1] c 33 N77-22386
- Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12830-1] c 07 N77-23106
- Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12321-1] c 37 N78-10467
- Closed loop spray cooling apparatus — for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c 31 N78-17237
- Multistation refrigeration system  
[NASA-CASE-NPO-13839-1] c 31 N78-25256
- Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721
- Heat exchanger — rocket combustion chambers and cooling systems  
[NASA-CASE-LEW-12252-1] c 34 N79-13288
- Closed loop spray cooling apparatus  
[NASA-CASE-LEW-11981-2] c 34 N79-20336
- Ozonation of cooling tower waters  
[NASA-CASE-NPO-14340-1] c 45 N80-14579
- Heat exchanger and method of making  
[NASA-CASE-LEW-12441-3] c 44 N81-24519
- Heat pipe cooled probe  
[NASA-CASE-LAR-12588-1] c 44 N81-24525
- Cooling system for high speed aircraft  
[NASA-CASE-LAR-12406-1] c 05 N81-26114
- Waveguide cooling system  
[NASA-CASE-NPO-15401-1] c 33 N81-29344
- Cooling by conversion of para to ortho-hydrogen  
[NASA-CASE-GSC-12770-1] c 34 N82-10358
- COORDINATES**
- Mechanical coordinate converter Patent  
[NASA-CASE-XNP-00614] c 14 N70-36907
- Lightning tracking system  
[NASA-CASE-KSC-10729-1] c 09 N73-32110
- Magnetic heading reference  
[NASA-CASE-LAR-11387-2] c 04 N77-19056
- COPOLYMERS**
- Method of producing alternating ether siloxane copolymers Patent  
[NASA-CASE-XMF-02584] c 06 N71-20905
- Dicyanoacetylene polymers Patent  
[NASA-CASE-XNP-03250] c 06 N71-23500
- Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-3] c 27 N80-24438
- Insoluble polyelectrolyte and ion-exchange hollow fiber impregnated therewith  
[NASA-CASE-NPO-13530-1] c 25 N81-17187
- Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 44 N81-29531
- COPPER**
- Method for etching copper Patent  
[NASA-CASE-XGS-06306] c 17 N71-16044
- Method of plating copper on aluminum Patent  
[NASA-CASE-XLA-08966-1] c 17 N71-25903
- Brazing alloy composition  
[NASA-CASE-XMF-06053] c 26 N75-27126
- Method for making an aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-1] c 44 N79-11469
- COPPER ALLOYS**
- Zirconium modified nickel-copper alloy  
[NASA-CASE-LEW-12245-1] c 26 N77-20201
- Thin film strain transducer — for strain monitoring of high altitude balloons  
[NASA-CASE-WLP-10055-1] c 35 N82-26632
- COPPER COMPOUNDS**
- Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027
- Laser coolant and ultraviolet filter  
[NASA-CASE-MFS-20180] c 16 N72-12440
- Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127
- COPPER FLUORIDES**
- Preparation of high purity copper fluoride  
[NASA-CASE-LEW-10794-1] c 06 N72-17093
- CORDAGE**
- Method of forming a root cord restrained convolute section  
[NASA-CASE-MSC-12398] c 05 N72-20098
- CORE STORAGE**
- Semiconductor-ferroelectric memory device  
[NASA-CASE-ERC-10307] c 08 N72-21198
- CORES**
- Method of making rolling element bearings  
[NASA-CASE-LEW-11087-2] c 37 N74-15128
- Electromagnetic transducer recording head having a laminated core section and tapered gap  
[NASA-CASE-NPO-10711-1] c 35 N77-21392
- Superplastically formed diffusion bonded metallic structure  
[NASA-CASE-FRC-11026-1] c 24 N82-24296
- CORK (MATERIALS)**
- Cork-resin ablative insulation for complex surfaces and method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388
- CORRECTION**
- Doppler frequency spread correction device for multiplex transmissions  
[NASA-CASE-XGS-02749] c 07 N69-38978
- CORRELATION DETECTION**
- Correlation type phase detector — with time correlation integrator for frequency multiplexed signals  
[NASA-CASE-GSC-11744-1] c 33 N75-26243
- Clutter free synthetic aperture radar correlator  
[NASA-CASE-NPO-14035-1] c 32 N78-18266
- Interferometric locating system  
[NASA-CASE-NPO-14173-1] c 04 N80-32359
- CORRELATORS**
- Millimeter wave radiometer for radio astronomy Patent  
[NASA-CASE-NXP-09832] c 30 N71-23723
- Digital demodulator-correlator  
[NASA-CASE-NPO-13982-1] c 32 N79-14267
- Serial data correlator/code translator  
[NASA-CASE-KSC-11025-1] c 32 N79-28383
- Baseband signal combiner for large aperture antenna array  
[NASA-CASE-NPO-14641-1] c 32 N81-29308
- A pipelined digital SAR azimuth correlator using hybrid FFT/transversal-filter  
[NASA-CASE-NPO-15519-1] c 32 N82-12298
- CORROSION**
- Method of neutralizing the corrosive surface of amine-cured epoxy resins  
[NASA-CASE-GSC-12686-1] c 27 N82-10227



## CORROSION PREVENTION

- Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00284] c 15 N71-16075
- Method of inhibiting stress corrosion cracks in titanium alloys Patent  
[NASA-CASE-NPO-10271] c 17 N71-16393
- Controlled glass bead peening Patent  
[NASA-CASE-XLA-07390] c 15 N71-18616
- Corrosion resistant beryllium Patent  
[NASA-CASE-LEW-10327] c 17 N71-33408
- Prevention of hydrogen embrittlement of high strength steel by hydrazine compositions --- by adding potassium hydroxide to hydrazine  
[NASA-CASE-NPO-12122-1] c 24 N76-14203
- Ozonation of cooling tower waters  
[NASA-CASE-NPO-14340-1] c 45 N80-14579
- Method of protecting a surface with a silicon-slurry/aluminate coating --- coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441

## CORROSION RESISTANCE

- High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-00726] c 17 N71-15644
- Solder flux which leaves corrosion-resistant coating Patent  
[NASA-CASE-XNP-03459-2] c 18 N71-15688
- High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-02991] c 17 N71-16025
- Soldering with solder flux which leaves corrosion resistant coating Patent  
[NASA-CASE-XNP-03459] c 15 N71-21078
- Method of making bearing material  
[NASA-CASE-LEW-11930-3] c 24 N80-33482
- Corrosion resistant thermal barrier coating --- protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188
- Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371
- Covering solid, film cooled surfaces with a duplex thermal barrier coating  
[NASA-CASE-LEW-13450-1] c 34 N82-25463

## CORRUGATED PLATES

- Superplastically formed diffusion bonded metallic structure  
[NASA-CASE-FRC-11026-1] c 24 N82-24296

## CORRUGATING

- Collapsible corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539
- Superplastically formed diffusion bonded metallic structure  
[NASA-CASE-FRC-11026-1] c 24 N82-24296

## COSINE SERIES

- Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-10503-1] c 09 N72-21248
- Function generator for synthesizing complex vibration mode patterns  
[NASA-CASE-LAR-10310-1] c 10 N73-20253
- Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716

## COSMIC DUST

- Cosmic dust sensor  
[NASA-CASE-GSC-10503-1] c 14 N72-20381
- Cosmic dust or other similar outer space particles impact location detector  
[NASA-CASE-GSC-11291-1] c 25 N72-33696
- Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c 35 N75-27331
- Cosmic dust analyzer  
[NASA-CASE-MSC-13802-2] c 35 N76-15431

## COST ANALYSIS

- Low cost solar energy collection system  
[NASA-CASE-NPO-13579-1] c 44 N78-17460

## COST REDUCTION

- An improved synthesis of 2,4,8,10-tetroxaspiro (5.5) undecane  
[NASA-CASE-ARC-11243-2] c 23 N80-31472

## COUCHES

- Shock absorbing support and restraint means Patent  
[NASA-CASE-XMS-01240] c 05 N70-35152
- Energy absorbing structure Patent Application  
[NASA-CASE-MSC-12279-1] c 15 N70-35679
- Articulated multiple couch assembly Patent  
[NASA-CASE-MSC-11253] c 05 N71-12343
- Collapsible Apollo couch  
[NASA-CASE-MSC-13140] c 05 N72-11085

## COULOMETERS

- Electrochemical coulometer and method of forming same Patent  
[NASA-CASE-XGS-05434] c 03 N71-20491
- Coulometer and third electrode battery charging circuit Patent  
[NASA-CASE-GSC-10487-1] c 03 N71-24719
- State-of-charge coulometer  
[NASA-CASE-NPO-15759-1] c 35 N82-26630

## COUNTERS

- Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137
- Electronic strain-level counter  
[NASA-CASE-LAR-10756-1] c 32 N73-26910
- Electrochemical detection device --- for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073
- Redundant operation of counter modules  
[NASA-CASE-NPO-14162-1] c 60 N81-15706
- Film advance indicator  
[NASA-CASE-LAR-12474-1] c 35 N82-26628
- Apparatus and process for microbial detection and enumeration  
[NASA-CASE-LAR-12709-1] c 35 N82-28604

## COUNTING CIRCUITS

- Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432
- Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463
- Relay binary circuit Patent  
[NASA-CASE-XMF-00421] c 09 N70-34502
- Reversible ring counter employing cascaded single SCR stages Patent  
[NASA-CASE-XGS-01473] c 09 N71-10673
- Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent  
[NASA-CASE-XLE-01246] c 14 N71-10797
- Magnetic counter Patent  
[NASA-CASE-XNP-08836] c 09 N71-12515
- Synchronous counter Patent  
[NASA-CASE-XGS-02440] c 08 N71-19432
- Digital cardiachometer system Patent  
[NASA-CASE-XMS-02399] c 05 N71-22896
- Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897
- Noninterruptable digital counting system Patent  
[NASA-CASE-XNP-09759] c 08 N71-24891
- Frequency measurement by coincidence detection with standard frequency  
[NASA-CASE-MSC-14649-1] c 33 N76-16331
- Redundant operation of counter modules  
[NASA-CASE-NPO-14162-1] c 60 N81-15706

## COUPLING

- Coupling for linear shaped charge Patent  
[NASA-CASE-XLA-00189] c 33 N70-36846
- Expandable support means  
[NASA-CASE-NPO-11059] c 15 N72-17454
- Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N82-26568

## COUPLING CIRCUITS

- Flipflop interrogator and bi-polar current driver Patent  
[NASA-CASE-XGS-03058] c 10 N71-19547
- Antenna array at focal plane of reflector with coupling network for beam switching Patent  
[NASA-CASE-GSC-10220-1] c 07 N71-27233
- Phase modulator Patent  
[NASA-CASE-MSC-13201-1] c 07 N71-28429
- Signal path series step biased multidevice high efficiency amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430
- Automatic quadrature control and measuring system --- using optical coupling circuitry  
[NASA-CASE-MFS-21660-1] c 35 N74-21017
- Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-3] c 33 N75-19520
- Non-contacting power transfer device  
[NASA-CASE-GSC-12595-1] c 33 N82-24422

## COUPLINGS

- Coupling device  
[NASA-CASE-XMS-07846-1] c 09 N69-21927
- Tubular coupling having frangible connecting means  
[NASA-CASE-XLA-02854] c 15 N69-27490
- Quick release separation mechanism Patent  
[NASA-CASE-XLA-01441] c 15 N70-41679
- Indexed keyed connection Patent  
[NASA-CASE-XMS-02532] c 15 N70-41808
- Quick attach and release fluid coupling assembly Patent  
[NASA-CASE-XKS-01985] c 15 N71-10782
- Ratchet mechanism Patent  
[NASA-CASE-MFS-12805] c 15 N71-17805
- Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489
- Duct coupling for single-handed operation Patent  
[NASA-CASE-MFS-20395] c 15 N71-24903
- Isolation coupling arrangement for a torque measuring system  
[NASA-CASE-XLA-04897] c 15 N72-22482
- Refrigerated coaxial coupling --- for microwave equipment  
[NASA-CASE-NPO-13504-1] c 33 N75-30430

- Opto-mechanical subsystem with temperature compensation through isothermal design  
[NASA-CASE-GSC-12059-1] c 35 N77-27366
- Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772
- Coupling device for moving vehicles  
[NASA-CASE-GSC-12322-1] c 37 N80-14398
- Device for coupling a first vehicle to a second vehicle  
[NASA-CASE-GSC-12429-1] c 37 N81-14320
- Micro-fluid exchange coupling apparatus  
[NASA-CASE-ARC-11114-1] c 51 N81-14605
- Reusable captive blind fastener  
[NASA-CASE-MSC-18742-1] c 37 N82-26673
- Connection system  
[NASA-CASE-MSC-20319-1] c 37 N82-31689

## COVERINGS

- Apparatus for ejection of an instrument cover  
[NASA-CASE-XMF-04132] c 15 N69-27502

## COWLINGS

- Thrust reverser for a long duct fan engine --- for turbofan engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293

## CRACKING (FRACTURING)

- Method of inhibiting stress corrosion cracks in titanium alloys Patent  
[NASA-CASE-NPO-10271] c 17 N71-16393
- TV fatigue crack monitoring system  
[NASA-CASE-LAR-11490-1] c 39 N78-16387

## CRASH LANDING

- Aircraft-mounted crash-activated transmitter device  
[NASA-CASE-MFS-16609-3] c 03 N76-32140

## CREEP RUPTURE STRENGTH

- Nickel-base alloy containing Mo-W-Al-Cr-Ta-Zr-C-Nb-B Patent  
[NASA-CASE-XLE-02082] c 17 N71-16026

## CRITICAL EXPERIMENTS

- Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372

## CRITICAL TEMPERATURE

- Stable superconducting magnet --- high current levels below critical temperature  
[NASA-CASE-XMF-05373-1] c 33 N79-21264

## CROSS CORRELATION

- Cross correlation anomaly detection system  
[NASA-CASE-NPO-13283] c 38 N78-17395
- Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events  
[NASA-CASE-NPO-15430-1] c 46 N82-26890

## CROSS FLOW

- Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968

## CROSS POLARIZATION

- Adaptive polarization separation  
[NASA-CASE-LAR-12196-1] c 33 N81-26358

## CROSSED FIELDS

- Plasma accelerator Patent  
[NASA-CASE-XLA-00675] c 25 N70-33267
- Energy conversion apparatus Patent  
[NASA-CASE-XLE-00212] c 03 N70-34134
- Crossed-field MHD plasma generator/accelerator Patent  
[NASA-CASE-XLA-03374] c 25 N71-15562

## CROSSLINKING

- Trifunctional alcohol  
[NASA-CASE-NPO-10714] c 06 N69-31244
- Trimerization of aromatic nitriles  
[NASA-CASE-LEW-12053-1] c 27 N78-15276
- Polymeric foams from cross-linkable poly-n-arylenebenzimidazoles  
[NASA-CASE-ARC-11008-1] c 27 N78-31232
- In situ self cross-linking of polyvinyl alcohol battery separators  
[NASA-CASE-LEW-12972-1] c 44 N79-25481
- Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307
- Method of cross-linking polyvinyl alcohol and other water soluble resins  
[NASA-CASE-LEW-13103-1] c 27 N80-32516
- Thermoset-thermoplastic aromatic polyamides  
[NASA-CASE-LAR-12723-1] c 27 N81-15107
- Process for the preparation of fluorene containing crosslinked elastomeric polytriazine and product so produced  
[NASA-CASE-ARC-11248-1] c 27 N81-17259
- The 1,2,4-oxadiazole elastomers --- heat resistant polymers  
[NASA-CASE-ARC-11253-1] c 27 N81-17262
- In-situ cross linking of polyvinyl alcohol --- application to battery separator films  
[NASA-CASE-LEW-13135-2] c 27 N81-24257
- Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13504-1] c 27 N81-27279



- Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13101-2] c 23 N81-29160
- Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 44 N81-29531
- Polyphenylquinoxalines containing pendant phenylethynyl and ethynyl groups --- thermoplastic resins  
[NASA-CASE-LAR-12638-1] c 27 N82-26463
- CRUCIBLES**  
Evaporant holder  
[NASA-CASE-XLA-03105] c 15 N69-27483
- CRUCIFORM WINGS**  
Solar powered aircraft  
[NASA-CASE-LAR-12615-1] c 05 N81-32138
- CRUDE OIL**  
Decontamination of petroleum products Patent  
[NASA-CASE-XNP-03835] c 06 N71-23499
- Crude oil desulfurization  
[NASA-CASE-NPO-14542-1] c 25 N82-23282
- CRUSTAL FRACTURES**  
System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603
- CRYOGENIC COOLING**  
Support assembly for cryogenically coolable low-noise choke waveguide  
[NASA-CASE-NPO-14253-1] c 32 N80-32605
- Low cost cryostat  
[NASA-CASE-NPO-14513-1] c 35 N81-14287
- Refrigerator module, system and process --- regenerative, cryogenic cooling of an infrared radiation detection system  
[NASA-CASE-ARC-11263-1] c 31 N81-27328
- Stirling cycle cryogenic cooler --- magnetically suspended pistons  
[NASA-CASE-GSC-12697-1] c 31 N82-11312
- CRYOGENIC EQUIPMENT**  
Refrigeration apparatus  
[NASA-CASE-NPO-10309] c 15 N69-23190
- Piping arrangement through a double chamber structure  
[NASA-CASE-XNP-08882] c 15 N69-39935
- Method and apparatus for cryogenic wire stripping Patent  
[NASA-CASE-MFS-10340] c 15 N71-17628
- Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725
- Valving device for automatic refilling in cryogenic liquid systems  
[NASA-CASE-NPO-11177] c 15 N72-17453
- Dual stage check valve  
[NASA-CASE-MSC-13587-1] c 15 N73-30459
- Heat operated cryogenic electrical generator  
[NASA-CASE-NPO-13303-1] c 20 N75-24837
- Cryostat system for temperatures on the order of 2 deg K or less  
[NASA-CASE-NPO-13459-1] c 31 N77-10229
- Device for tensioning test specimens within an hermetically sealed chamber  
[NASA-CASE-MFS-23281-1] c 35 N77-22450
- Multistation refrigeration system  
[NASA-CASE-NPO-13839-1] c 31 N78-25256
- System for and method of freezing biological tissue  
[NASA-CASE-GSC-12173-1] c 51 N79-10694
- Shock isolator for operating a diode laser on a closed-cycle refrigerator  
[NASA-CASE-GSC-12297-1] c 37 N79-28549
- Low temperature latching solenoid  
[NASA-CASE-MSC-18106-1] c 33 N82-11357
- Unitary seal ring assembly --- cryogenic applications  
[NASA-CASE-MFS-25678-1] c 37 N82-25517
- CRYOGENIC FLUID STORAGE**  
Apparatus for transferring cryogenic liquids Patent  
[NASA-CASE-XLE-00345] c 15 N70-38020
- Cryogenic storage system Patent  
[NASA-CASE-XMS-04390] c 31 N70-41871
- Techniques for insulating cryogenic fuel containers Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015
- Method of making a filament-wound container Patent  
[NASA-CASE-XLE-03803-2] c 15 N71-17651
- Cryogenic insulation system Patent  
[NASA-CASE-XLE-04222] c 23 N71-22881
- Panelized high performance multilayer insulation Patent  
[NASA-CASE-MFS-14023] c 33 N71-25351
- Cryogenic thermal insulation Patent  
[NASA-CASE-XMF-05046] c 33 N71-28892
- Zero gravity shadow shield aligner  
[NASA-CASE-KSC-10622-1] c 31 N72-21893
- Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c 35 N74-15093
- Low heat leak connector for cryogenic system  
[NASA-CASE-XLE-02367-1] c 31 N79-21225
- Cryogenic container compound suspension strap  
[NASA-CASE-ARC-11157-1] c 37 N80-18393
- CRYOGENIC FLUIDS**  
Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423
- Venting vapor apparatus Patent  
[NASA-CASE-XLE-00288] c 15 N70-34247
- Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859
- Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492
- Densitometer Patent  
[NASA-CASE-XLE-00688] c 14 N70-41330
- Cryogenic connector for vacuum use Patent  
[NASA-CASE-XGS-02441] c 15 N70-41629
- Liquid flow sight assembly Patent  
[NASA-CASE-XLE-02998] c 14 N70-42074
- Automatic thermal switch Patent  
[NASA-CASE-XNP-03796] c 23 N71-15467
- Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968
- Apparatus for measuring thermal conductivity Patent  
[NASA-CASE-XGS-01052] c 14 N71-15992
- Process of forming particles in a cryogenic path Patent  
[NASA-CASE-NPO-10250] c 23 N71-16212
- Superconducting alternator Patent  
[NASA-CASE-XLE-02823] c 09 N71-23443
- Flow angle sensor and read out system Patent  
[NASA-CASE-XLE-04503] c 14 N71-24864
- Geysering inhibitor for vertical cryogenic transfer pipe  
[NASA-CASE-KSC-10615] c 15 N73-12486
- Magnetocaloric pump --- for cryogenic fluids  
[NASA-CASE-LEW-11672-1] c 37 N74-27904
- Cryogenic liquid sensor  
[NASA-CASE-NPO-10619-1] c 35 N77-21393
- CRYOGENIC GYROSCOPES**  
Cryogenic gyroscope housing --- with annular disks for gas spin-up  
[NASA-CASE-MFS-21136-1] c 35 N74-18323
- CRYOGENIC MAGNETS**  
Superconducting alternator  
[NASA-CASE-XLE-02824] c 03 N69-39890
- CRYOGENIC ROCKET PROPELLANTS**  
Quick attach and release fluid coupling assembly Patent  
[NASA-CASE-XKS-01985] c 15 N71-10782
- Hot wire liquid level detector for cryogenic fluids Patent  
[NASA-CASE-XLE-00454] c 23 N71-17802
- Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042
- CRYOGENIC STORAGE**  
Insulation system Patent  
[NASA-CASE-XLE-02647] c 18 N71-23658
- Filament wound container Patent  
[NASA-CASE-XLE-03803] c 15 N71-23816
- CRYOGENIC WIND TUNNELS**  
Continuous self-locking spiral wound seal --- for maintaining pressure between chambers in cryogenic wind tunnels  
[NASA-CASE-LAR-12315-1] c 37 N82-24490
- CRYOGENICS**  
Low temperature aluminum alloy Patent  
[NASA-CASE-XMF-02786] c 17 N71-20743
- Cryogenic cooling system Patent  
[NASA-CASE-NPO-10467] c 23 N71-26654
- Germanium coated microbridge and method  
[NASA-CASE-MFS-23274-1] c 33 N78-13320
- Dielectric-loaded waveguide circulator for cryogenically cooled and cascaded maser waveguide structures  
[NASA-CASE-NPO-14254-1] c 36 N80-18372
- High toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-3] c 26 N80-32484
- Multispectral scanner optical system  
[NASA-CASE-MSC-18255-1] c 74 N80-33210
- Polymers compositions and their method of manufacture --- forming filled polymer systems using cryogenics  
[NASA-CASE-NPO-10424-1] c 27 N81-24258
- CRYOLITE**  
Ultraviolet filter  
[NASA-CASE-XNP-02340] c 23 N69-24332
- CRYOSTATS**  
Low temperature flexure fatigue cryostat Patent  
[NASA-CASE-XMF-02984] c 14 N71-17659
- Horizontal cryostat for fatigue testing Patent  
[NASA-CASE-XMF-10968] c 14 N71-24234
- Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c 35 N74-15093
- Cryostat system for temperatures on the order of 2 deg K or less  
[NASA-CASE-NPO-13459-1] c 31 N77-10229
- Low cost cryostat  
[NASA-CASE-NPO-14513-1] c 35 N81-14287
- CRYOTRAPPING**  
Atomic hydrogen storage --- cryotrapping and magnetic field strength  
[NASA-CASE-LEW-12081-2] c 28 N80-20402
- CRYSTAL DEFECTS**  
Method of controlling defect orientation in silicon crystal ribbon growth  
[NASA-CASE-NPO-13918-1] c 76 N79-11920
- CRYSTAL FILTERS**  
Infrared tunable laser  
[NASA-CASE-ARC-10463-1] c 09 N73-32111
- Partial polarizer filter  
[NASA-CASE-GSC-12225-1] c 74 N79-14891
- Inductorless narrow-band filter/amplifier  
[NASA-CASE-GSC-12410-1] c 33 N79-24260
- CRYSTAL GROWTH**  
Apparatus for producing high purity silicon carbide crystals Patent  
[NASA-CASE-XLA-02057] c 26 N70-40015
- Method of producing crystalline materials  
[NASA-CASE-NPO-10440] c 15 N72-21466
- Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c 25 N75-26043
- Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c 76 N76-25049
- Method of crystallization --- in gravity-free environments  
[NASA-CASE-MFS-23001-1] c 76 N77-32919
- Pressure transducer --- using a monomeric charge transfer complex sensor  
[NASA-CASE-NPO-11150] c 35 N78-17359
- Method of controlling defect orientation in silicon crystal ribbon growth  
[NASA-CASE-NPO-13918-1] c 76 N79-11920
- Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 76 N79-23798
- Method of mitigating titanium impurities effects in p-type silicon material for solar cells  
[NASA-CASE-NPO-14635-1] c 44 N80-24741
- Means for growing ribbon crystals without subjecting the crystals to thermal shock-induced strains  
[NASA-CASE-NPO-14298-1] c 76 N80-32244
- Method of growing a ribbon crystal particularly suited for facilitating automated control of ribbon width  
[NASA-CASE-NPO-14295-1] c 76 N80-32245
- Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389
- Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N81-19944
- Method and apparatus for growth of crystals by pressure reduction of supercritical or subcritical solution  
[NASA-CASE-NPO-15772-1] c 76 N82-23031
- Controlled in-situ etchback  
[NASA-CASE-NPO-15625-1] c 76 N82-25995
- Process and apparatus for growing a crystal ribbon --- for use in photovoltaic cells  
[NASA-CASE-NPO-15629-1] c 44 N82-26779
- CRYSTAL LATTICES**  
Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
[NASA-CASE-MFS-23315-1] c 76 N78-24950
- Crystal cleaving machine  
[NASA-CASE-GSC-12584-1] c 37 N82-32730
- CRYSTAL OPTICS**  
Optical crystal temperature gauge with fiber optic connections  
[NASA-CASE-MSC-18627-1] c 74 N82-30071
- CRYSTAL OSCILLATORS**  
Microbalance including crystal oscillators for measuring contaminants in a gas system Patent  
[NASA-CASE-NPO-10144] c 14 N71-17701
- Passive intrusion detection system  
[NASA-CASE-NPO-13804-1] c 33 N80-23559
- CRYSTAL RECTIFIERS**  
Turn on transient limiter Patent  
[NASA-CASE-GSC-10413] c 10 N71-26531
- CRYSTAL STRUCTURE**  
Method of growing composites of the type exhibiting the Soret effect --- improved structure of eutectic alloy crystals  
[NASA-CASE-MFS-22926-1] c 24 N77-27187
- CRYSTALLINITY**  
Crystalline polyimides --- reinforcing fibers for high temperature composites and adhesives as well as flame retardation  
[NASA-CASE-LAR-12099-1] c 27 N80-16158
- CRYSTALLIZATION**  
Method of crystallization --- in gravity-free environments  
[NASA-CASE-MFS-23001-1] c 76 N77-32919



## CRYSTALS

- Brushless direct current tachometer Patent  
[NASA-CASE-MFS-20385] c 09 N71-24904  
Method and apparatus for slicing crystals  
[NASA-CASE-GSC-12291-1] c 76 N80-18951  
Workpiece positioning vise  
[NASA-CASE-GSC-12762-1] c 37 N82-29604  
Crystal cleaving machine  
[NASA-CASE-GSC-12584-1] c 37 N82-32730

## CUES

- Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806

## CUFFS

- Logic-controlled occlusive cuff system  
[NASA-CASE-MSC-14836-1] c 52 N82-11770  
Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25640-1] c 52 N82-26962

## CULTURE TECHNIQUES

- Variable angle tube holder  
[NASA-CASE-LAR-11074-1] c 11 N72-25284  
Automatic inoculating apparatus — includes movable carriage, drive motor, and swabbing motor  
[NASA-CASE-LAR-11074-1] c 51 N75-13502  
Automatic microbial transfer device  
[NASA-CASE-LAR-11354-1] c 35 N75-27330  
Electrochemical detection device — for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073  
Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698  
Enhancement of in vitro Guayule propagation  
[NASA-CASE-NPO-15213-1] c 51 N81-29728  
Method and apparatus for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N82-12739

## CURIE TEMPERATURE

- Manganese bismuth films with narrow transfer characteristics for Cune-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678

## CURING

- Reaction cured glass and glass coatings  
[NASA-CASE-ARC-11051-1] c 27 N78-32260  
Ambient cure polyimide foams — thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215  
Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-1] c 27 N80-26447  
Curing agent for polyepoxides and epoxy resins and composites cured therewith — preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260

## CURRENT AMPLIFIERS

- Tuned analog network — bandpass filter networks  
[NASA-CASE-GSC-12650-1] c 33 N82-10324  
Multi-channel temperature measurement amplification system — solar heating systems  
[NASA-CASE-MFS-23775-1] c 44 N82-16474  
A dc to dc converter — raising battery voltage in an ion propulsion system  
[NASA-CASE-MFS-25430-1] c 33 N82-28550

## CURRENT CONVERTERS (AC TO DC)

- Simplified dc to dc converter  
[NASA-CASE-LEW-13495-1] c 33 N82-24432

## CURRENT DENSITY

- Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500  
Method and apparatus for sputtering utilizing an apertured electrode and a pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c 17 N73-24569  
Stable superconducting magnet — high current levels below critical temperature  
[NASA-CASE-XMF-05373-1] c 33 N79-21264  
Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524

## CURRENT DISTRIBUTION

- Connector - Electrical  
[NASA-CASE-XLA-01288] c 09 N69-21470  
Electrostatic ion rocket engine Patent  
[NASA-CASE-XLE-02066] c 28 N71-15661  
Reversible current control apparatus Patent  
[NASA-CASE-XLA-09371] c 10 N71-18724  
Potentiometer sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271  
Load insensitive electrical device — power converters for supplying direct current at one voltage from a source at another voltage  
[NASA-CASE-XER-11046-2] c 33 N74-22864

## CURRENT REGULATORS

- Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c 09 N69-24318  
Baseline stabilization system for ionization detector Patent  
[NASA-CASE-XNP-03128] c 10 N70-41991

- Magnetic core current steering commutator Patent  
[NASA-CASE-NPO-10201] c 08 N71-18694  
Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316  
Saturation current protection apparatus for saturable core transformers Patent  
[NASA-CASE-ERC-10075] c 09 N71-24800  
Drive circuit for minimizing power consumption in inductive load Patent  
[NASA-CASE-NPO-10716] c 09 N71-24892  
Turn on transient limiter Patent  
[NASA-CASE-GSC-10413] c 10 N71-26531  
Current regulating voltage divider  
[NASA-CASE-MFS-20935] c 09 N71-34212  
Ripple indicator  
[NASA-CASE-KSC-10162] c 09 N72-11225  
Inrush current limiter  
[NASA-CASE-GSC-11789-1] c 33 N77-14333  
Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257  
Three phase power factor controller  
[NASA-CASE-MFS-25535-1] c 33 N81-12330  
Motor power factor controller with a reduced voltage starter  
[NASA-CASE-MFS-25586-1] c 33 N82-11360

## CURVATURE

- Spin forming tubular elbows Patent  
[NASA-CASE-XMF-01083] c 15 N71-22723  
Two degree inverted flexure  
[NASA-CASE-ARC-10345-1] c 15 N73-12488  
Dual aperture multispectral Schmidt objective  
[NASA-CASE-GSC-12756-1] c 74 N82-30073

## CURVE FITTING

- Voltage-current characteristic simulator Patent  
[NASA-CASE-XMS-01554] c 10 N71-10578

## CURVED PANELS

- Method and apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917] c 15 N71-15597  
Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436  
Roll-up solar array Patent  
[NASA-CASE-NPO-10188] c 03 N71-20273  
Apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917-2] c 15 N71-24836  
Variable contour securing system  
[NASA-CASE-MSC-16270-1] c 37 N78-27423

## CUSHIONS

- Seat cushion to provide realistic acceleration cues to aircraft simulator pilot  
[NASA-CASE-LAR-12149-2] c 09 N79-31228

## CUTTERS

- Aligning and positioning device Patent  
[NASA-CASE-XMS-04178] c 15 N71-22798  
Weld preparation machine Patent  
[NASA-CASE-XKS-07953] c 15 N71-26134  
Microcircuit negative cutter  
[NASA-CASE-XLA-09843] c 15 N72-27485  
Insert facing tool — manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MFS-21485-1] c 37 N74-25968  
Grinding arrangement for ball nose milling cutters  
[NASA-CASE-LAR-10450-1] c 37 N74-27905  
Ophthalmic liquifaction pump  
[NASA-CASE-LEW-12051-1] c 52 N75-33640  
Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443  
System for slicing silicon wafers  
[NASA-CASE-NPO-14406-1] c 37 N80-29703  
Tubing and cable cutting tool  
[NASA-CASE-LAR-12786-1] c 37 N82-20545  
Open ended tubing cutters  
[NASA-CASE-MSC-18538-1] c 37 N82-26672  
Improved ingot slicing machine  
[NASA-CASE-NPO-15483-1] c 37 N82-28642

## CUTTING

- Ellipsograph for pantograph Patent  
[NASA-CASE-XLA-03102] c 14 N71-21079  
Precision alignment apparatus for cutting a workpiece  
[NASA-CASE-LAR-11658-1] c 37 N77-14478  
Explosively activated egress area  
[NASA-CASE-LAR-12624-1] c 03 N81-29107  
Precision reciprocating filament chopper  
[NASA-CASE-LAR-12564-2] c 37 N82-18604  
Tubing and cable cutting tool  
[NASA-CASE-LAR-12786-1] c 37 N82-20545

## CYANATES

- Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides — flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116

## CYCLES

- Pneumatic system for controlling and actuating pneumatic cyclic devices  
[NASA-CASE-XMS-04843] c 03 N69-21469

- Feedback shift register with states decomposed into cycles of equal length  
[NASA-CASE-NPO-11082] c 08 N72-22167

## CYCLIC ACCELERATORS

- Cyclical bi-directional rotary actuator  
[NASA-CASE-GSC-11883-1] c 37 N77-19458

## CYCLIC COMPOUNDS

- Carboranylcydlophosphazenes and their polymers — thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389

## CYCLIC HYDROCARBONS

- Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572

## CYCLIC LOADS

- Automatic fatigue test temperature programmer Patent  
[NASA-CASE-XLA-02059] c 33 N71-24276  
Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c 32 N72-25877  
Material fatigue testing system  
[NASA-CASE-MFS-20673] c 14 N73-20476

## CYCLOTRON RADIATION

- Targets for producing high purity I-123  
[NASA-CASE-LEW-10518-3] c 25 N78-27226

## CYCLOTRON RESONANCE

- Miniature cyclotron resonance ion source using small permanent magnet  
[NASA-CASE-NPO-14324-1] c 72 N80-27163

## CYCLOTRON RESONANCE DEVICES

- Miniature cyclotron resonance ion source using small permanent magnet  
[NASA-CASE-NPO-14324-1] c 72 N80-27163  
Gyrotron transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N81-16384

## CYLINDRICAL ANTENNAS

- Variable beamwidth antenna — with multiple beam, variable feed system  
[NASA-CASE-GSC-11862-1] c 32 N76-18295

## CYLINDRICAL BODIES

- Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c 36 N74-20009  
Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968

## CYLINDRICAL CHAMBERS

- Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N81-12422

## CYSTS

- Coupling apparatus for ultrasonic medical diagnostic system  
[NASA-CASE-NPO-13935-1] c 52 N79-14751

## CZOCHEWSKI METHOD

- Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N82-30105

## D

## DAMPING

- Dynamic precession damper for spin stabilized vehicles Patent  
[NASA-CASE-XLA-01989] c 21 N70-34295  
Slosh suppressing device and method Patent  
[NASA-CASE-XMF-00658] c 12 N70-38997  
Attitude control and damping system for spacecraft Patent  
[NASA-CASE-XLA-02551] c 21 N71-21708  
Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694  
Nutation damper  
[NASA-CASE-GSC-11205-1] c 15 N73-25513  
Parasitic suppressing circuit  
[NASA-CASE-ERC-10403-1] c 10 N73-26228

## DATA ACQUISITION

- Analog-to-digital conversion system Patent  
[NASA-CASE-XAC-00404] c 08 N70-40125  
Position location and data collection system and method Patent  
[NASA-CASE-GSC-10083-1] c 30 N71-16090  
Analog signal integration and reconstruction system Patent  
[NASA-CASE-NPO-10344] c 10 N71-26544  
Data transfer system Patent  
[NASA-CASE-NPO-12107] c 08 N71-27255  
Simultaneous acquisition of tracking data from two stations  
[NASA-CASE-NPO-13292-1] c 32 N75-15854  
Contour detector and data acquisition system for the left ventricular outline  
[NASA-CASE-ARC-10985-1] c 52 N79-10724

## DATA COLLECTION PLATFORMS

- Remote platform power conserving system  
[NASA-CASE-GSC-11182-1] c 15 N75-13007



## DATA COMPRESSION

- Data compression system with a minimum time delay unit Patent  
[NASA-CASE-XNP-08832] c 08 N71-12506
- Data compression processor Patent  
[NASA-CASE-NPO-10068] c 08 N71-19288
- Wide range data compression system Patent  
[NASA-CASE-XGS-02612] c 08 N71-19435
- Method and apparatus for data compression by a decreasing slope threshold test  
[NASA-CASE-NPO-10769] c 08 N72-11171
- Data compression system  
[NASA-CASE-NPO-11243] c 07 N72-20154
- Gated compressor, distortionless signal limiter  
[NASA-CASE-NPO-11820-1] c 32 N74-19788
- Space communication system for compressed data with a concatenated Reed-Solomon-Viterbi coding channel  
[NASA-CASE-NPO-13545-1] c 32 N77-12240
- Sampling video compression system  
[NASA-CASE-ARC-10984-1] c 32 N77-24328

## DATA CONVERTERS

- Logarithmic converter Patent  
[NASA-CASE-XLA-00471] c 08 N70-34778
- Mechanical coordinate converter Patent  
[NASA-CASE-XNP-00614] c 14 N70-36907
- Analog Signal to Discrete Time Interval Converter (ASDTIC)  
[NASA-CASE-ERC-10048] c 09 N72-25251
- High speed direct binary to binary coded decimal converter and scaler  
[NASA-CASE-KSC-10595] c 08 N73-12176
- Image data rate converter having a drum with a fixed head and a rotatable head  
[NASA-CASE-NPO-11659-1] c 35 N74-11283
- Electronic analog divider  
[NASA-CASE-LEW-11881-1] c 33 N77-17354
- Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570

## DATA CORRELATION

- An instrument for determining coincidence and elapse time between independent sources of random sequential events  
[NASA-CASE-LAR-12531-1] c 35 N81-31529

## DATA LINKS

- Multichannel telemetry system  
[NASA-CASE-NPO-11572] c 07 N73-16121
- Automated attendance accounting system  
[NASA-CASE-NPO-11456] c 08 N73-26176
- Multi-computer multiple data path hardware exchange system  
[NASA-CASE-NPO-13422-1] c 60 N76-14818
- Apparatus for simulating optical transmission links  
[NASA-CASE-GSC-11877-1] c 74 N76-18913

## DATA MANAGEMENT

- Selective data segment monitoring system --- using shift registers  
[NASA-CASE-ARC-10899-1] c 60 N77-19760

## DATA PROCESSING

- Energy management system for glider type vehicle Patent  
[NASA-CASE-XFR-00756] c 02 N71-13421
- Minimal logic block encoder Patent  
[NASA-CASE-NPO-10595] c 10 N71-25917
- Data transfer system Patent  
[NASA-CASE-NPO-12107] c 08 N71-27255
- Transient augmentation circuit for pulse amplifiers Patent  
[NASA-CASE-XNP-01068] c 10 N71-28739
- Pseudonoise (PN) synchronization of data system with derivation of clock frequency from received signal for clocking receiver PN generator  
[NASA-CASE-NXP-03623] c 09 N73-28084
- Image data rate converter having a drum with a fixed head and a rotatable head  
[NASA-CASE-NPO-11659-1] c 35 N74-11283
- Charge-coupled device data processor for an airborne imaging radar system  
[NASA-CASE-NPO-13587-1] c 32 N77-32342
- Interactive color display for multispectral imagery using correlation clustering  
[NASA-CASE-MS-C-16253-1] c 32 N79-20297
- High-speed multiplexing of keyboard data inputs  
[NASA-CASE-NPO-14554-1] c 60 N81-27814

## DATA PROCESSING EQUIPMENT

- Data processor having multiple sections activated at different times by selective power coupling to the sections Patent  
[NASA-CASE-XGS-04767] c 08 N71-12494
- Demodulation system Patent  
[NASA-CASE-XAC-04030] c 10 N71-19472
- Rate augmented digital to analog converter Patent  
[NASA-CASE-XLA-07828] c 08 N71-27057
- Variable digital processor including a register for shifting and rotating bits in either direction Patent  
[NASA-CASE-GSC-10186] c 08 N71-33110

- Flexible computer accessed telemetry  
[NASA-CASE-NPO-11358] c 07 N72-25172
- Versatile arithmetic unit for high speed sequential decoder  
[NASA-CASE-NPO-11371] c 08 N73-12177
- Data processor with conditionally supplied clock signals  
[NASA-CASE-GSC-10975-1] c 08 N73-13187
- Automated attendance accounting system  
[NASA-CASE-NPO-11456] c 08 N73-26176
- Space communication system for compressed data with a concatenated Reed-Solomon-Viterbi coding channel  
[NASA-CASE-NPO-13545-1] c 32 N77-12240
- High-speed multiplexing of keyboard data inputs  
[NASA-CASE-NPO-14554-1] c 60 N81-27814

## DATA RECORDERS

- Data compressor Patent  
[NASA-CASE-XNP-04067] c 08 N71-22707
- Recorder using selective noise filter  
[NASA-CASE-ERC-10112] c 07 N72-21119
- Recorder/processor apparatus --- for optical data processing  
[NASA-CASE-GSC-11553-1] c 35 N74-15831

## DATA RECORDING

- System for recording and reproducing pulse code modulated data Patent  
[NASA-CASE-XGS-01021] c 08 N71-21042
- Data compressor Patent  
[NASA-CASE-XNP-04067] c 08 N71-22707
- Incremental tape recorder and data rate converter Patent  
[NASA-CASE-XNP-02778] c 08 N71-22710
- Transient video signal recording with expanded playback Patent  
[NASA-CASE-ARC-10003-1] c 09 N71-25866
- On-film optical recording of camera lens settings  
[NASA-CASE-MS-C-12363-1] c 14 N73-26431
- Image data rate converter having a drum with a fixed head and a rotatable head  
[NASA-CASE-NPO-11659-1] c 35 N74-11283
- Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c 35 N74-26946

## DATA REDUCTION

- Data compression system  
[NASA-CASE-XNP-09785] c 08 N69-21928
- Method and system for respiration analysis Patent  
[NASA-CASE-XFR-08403] c 05 N71-11202
- Data compression system with a minimum time delay unit Patent  
[NASA-CASE-XNP-08832] c 08 N71-12506
- Data compression processor Patent  
[NASA-CASE-NPO-10068] c 08 N71-19288
- Wide range data compression system Patent  
[NASA-CASE-XGS-02612] c 08 N71-19435
- Data compressor Patent  
[NASA-CASE-XNP-04067] c 08 N71-22707
- Method and apparatus for data compression by a decreasing slope threshold test  
[NASA-CASE-NPO-10769] c 08 N72-11171
- Data compression system  
[NASA-CASE-NPO-11243] c 07 N72-20154
- Digital slope threshold data compressor  
[NASA-CASE-NPO-11630] c 08 N72-33172

## DATA RETRIEVAL

- Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c 08 N71-12504
- Asynchronous, multiplexing, single line transmission and recovery data system --- for satellite use  
[NASA-CASE-NPO-13321-1] c 32 N75-26195

## DATA SAMPLING

- Reduced bandwidth video communication system utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c 07 N71-23026
- Signal processing apparatus for multiplex transmission Patent  
[NASA-CASE-NPO-10388] c 07 N71-24622
- Television signal processing system Patent  
[NASA-CASE-NPO-10140] c 07 N71-24742
- Method and apparatus for data compression by a decreasing slope threshold test  
[NASA-CASE-NPO-10769] c 08 N72-11171
- Sampling video compression system  
[NASA-CASE-ARC-10984-1] c 32 N77-24328
- CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N81-27396

## DATA SMOOTHING

- Variable time constant smoothing circuit Patent  
[NASA-CASE-XGS-01983] c 10 N70-41964
- Smoothing filter for digital to analog conversion  
[NASA-CASE-FRC-11025-1] c 33 N82-24417

## DATA STORAGE

- Data handling system based on source significance, storage availability and data received from the source Patent Application  
[NASA-CASE-XNP-04162-1] c 08 N70-34675

- Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c 08 N71-12504
- Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c 08 N71-19420
- Event recorder Patent  
[NASA-CASE-XLA-01832] c 14 N71-21006
- System for recording and reproducing pulse code modulated data Patent  
[NASA-CASE-XGS-01021] c 08 N71-21042
- Incremental tape recorder and data rate converter Patent  
[NASA-CASE-XNP-02778] c 08 N71-22710
- Multiple hologram recording and readout system Patent  
[NASA-CASE-ERC-10151] c 16 N71-29131
- Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c 21 N73-13644
- Data storage, image tube type  
[NASA-CASE-MS-C-14053-1] c 60 N74-12888
- Lightning current waveform measuring system  
[NASA-CASE-KSC-11018-1] c 33 N79-10337

## DATA SYSTEMS

- Data handling system based on source significance, storage availability and data received from the source Patent Application  
[NASA-CASE-XNP-04162-1] c 08 N70-34675
- Rate augmented digital to analog converter Patent  
[NASA-CASE-XLA-07828] c 08 N71-27057
- Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MS-C-14070-1] c 32 N74-32598

## DATA TRANSMISSION

- Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333
- Phase-shift data transmission system having a pseudo-noise SYNC code modulated with the data in a single channel Patent  
[NASA-CASE-XNP-00911] c 08 N70-41961
- Data compression system with a minimum time delay unit Patent  
[NASA-CASE-XNP-08832] c 08 N71-12506
- Data compression processor Patent  
[NASA-CASE-NPO-10068] c 08 N71-19288
- Wide range data compression system Patent  
[NASA-CASE-XGS-02612] c 08 N71-19435
- Phase quadrature-plural channel data transmission system Patent  
[NASA-CASE-XAC-06302] c 08 N71-19763
- Reduced bandwidth video communication system utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c 07 N71-23026
- Frequency shift keying apparatus Patent  
[NASA-CASE-XGS-01537] c 07 N71-23405
- Decoder system Patent  
[NASA-CASE-NPO-10118] c 07 N71-24741
- Data compression system  
[NASA-CASE-NPO-11243] c 07 N72-20154
- Multichannel telemetry system  
[NASA-CASE-NPO-11572] c 07 N73-16121
- Automated attendance accounting system  
[NASA-CASE-NPO-11456] c 08 N73-26176
- System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c 33 N75-19519
- Sampling video compression system  
[NASA-CASE-ARC-10984-1] c 32 N77-24328
- Pseudo noise code and data transmission method and apparatus  
[NASA-CASE-GSC-12017-1] c 32 N77-30308
- Multi-channel rotating optical interface for data transmission  
[NASA-CASE-NPO-14066-1] c 74 N79-34011
- System for a displaying at a remote station data generated at a central station and for powering the remote station from the central station  
[NASA-CASE-GSC-12411-1] c 33 N81-14221

## DAWSONITE

- Synthesis of dawsonites  
[NASA-CASE-ARC-113261-1] c 25 N80-31490

## DEBRIS

- Counter pumping debris excluder and separator --- gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090

## DECAY RATES

- Solar sensor having coarse and fine sensing with matched preirradiated cells and method of selecting cells Patent  
[NASA-CASE-XLA-01584] c 14 N71-23269

## DECCELERATION

- Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-36410
- Discrete local altitude sensing device Patent  
[NASA-CASE-XMS-03792] c 14 N70-41812



Hot air balloon deceleration and recovery system Patent  
[NASA-CASE-XLA-06824-2] c 02 N71-11037

Zero gravity apparatus Patent  
[NASA-CASE-XMF-06515] c 14 N71-23227

**DECIMALS**  
High speed direct binary to binary coded decimal converter and scaler  
[NASA-CASE-KSC-10595] c 08 N73-12176

**DECISION MAKING**  
Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MS-C-14070-1] c 32 N74-32598

**DECODERS**  
Serial digital decoder Patent  
[NASA-CASE-NPO-10150] c 08 N71-24650

BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890

Encoder/decoder system for a rapidly synchronizable binary code Patent  
[NASA-CASE-NPO-10342] c 10 N71-33407

Compact-bi-phase pulse coded modulation decoder  
[NASA-CASE-KSC-10834-1] c 33 N76-14371

Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MS-C-14557-1] c 32 N76-16249

Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c 33 N77-26386

Serial data correlator/code translator  
[NASA-CASE-KSC-11025-1] c 32 N79-28383

Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359

**DECODING**  
Decoder system Patent  
[NASA-CASE-NPO-10118] c 07 N71-24741

Versatile arithmetic unit for high speed sequential decoder  
[NASA-CASE-NPO-11371] c 08 N73-12177

Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MS-C-14070-1] c 32 N74-32598

Differential pulse code modulation  
[NASA-CASE-MS-C-12506-1] c 32 N77-12239

**DECOMMUTATORS**  
Memory-based parallel data output controller  
[NASA-CASE-GSC-12447-1] c 60 N80-21987

Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359

**DECONTAMINATION**  
Decontamination of petroleum products Patent  
[NASA-CASE-XNP-03835] c 06 N71-23499

Helium refrigerator and method for decontaminating the refrigerator  
[NASA-CASE-NPO-10634] c 23 N72-25619

Plasma cleaning device — designed for high vacuum environments  
[NASA-CASE-MFS-22906-1] c 75 N78-27913

**DEEP SPACE NETWORK**  
Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c 10 N73-26229

**DEFECTS**  
Hybrid holographic non-destructive test system  
[NASA-CASE-MFS-23114-1] c 38 N78-32447

**DEFLECTION**  
Bipropellant injector  
[NASA-CASE-XNP-09461] c 28 N72-23809

Noncontacting method for measuring angular deflection  
[NASA-CASE-LAR-12178-1] c 74 N80-21138

**DEFLECTORS**  
Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c 28 N70-34788

Aircraft wheel spray drag alleviator Patent  
[NASA-CASE-XLA-01583] c 02 N70-36825

Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173

Exhaust flow deflector — for ducted gas flow  
[NASA-CASE-LAR-11570-1] c 34 N76-18364

Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343

**DEFOCUSING**  
Retrodirective modulator Patent  
[NASA-CASE-GSC-10062] c 14 N71-15605

**DEFORMATION**  
Arbitrarily shaped model survey system Patent  
[NASA-CASE-LAR-10098] c 32 N71-26681

Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c 32 N72-25877

Deformable bearing seat  
[NASA-CASE-LEW-12527-1] c 37 N77-32500

**DEGASSING**  
Degaser/mixer for liquids  
[NASA-CASE-MS-C-18936-1] c 25 N82-22329

**DEGREES OF FREEDOM**

Training vehicle for controlling attitude Patent  
[NASA-CASE-XMS-02977] c 11 N71-10746

Dynamic vibration absorber Patent  
[NASA-CASE-LAR-10083-1] c 15 N71-27006

Kinesthetic control simulator — for pilot training  
[NASA-CASE-LAR-10276-1] c 09 N75-15662

**DEHUMIDIFICATION**  
Condenser - Separator  
[NASA-CASE-LAR-08645] c 15 N69-21465

**DEHYDRATED FOOD**  
Modification of the physical properties of freeze-dried rice  
[NASA-CASE-MS-C-13540-1] c 05 N72-33096

**DELAY CIRCUITS**  
Pulsed differential comparator circuit Patent  
[NASA-CASE-XLE-03804] c 10 N71-19471

Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418

Telemetry synchronizer  
[NASA-CASE-GSC-11868-1] c 17 N76-22245

Sweep group delay measurement  
[NASA-CASE-NPO-13909-1] c 33 N78-25319

Pseudonoise code tracking loop  
[NASA-CASE-MS-C-18035-1] c 32 N81-15179

**DELAY LINES**  
A solid state acoustic variable time delay line Patent  
[NASA-CASE-ERC-10032] c 10 N71-25900

**DELTA MODULATION**  
Multifunction audio digitizer — producing direct delta and pulse code modulation  
[NASA-CASE-MS-C-13855-1] c 35 N74-17885

**DELTA WINGS**  
Variable-geometry winged reentry vehicle Patent  
[NASA-CASE-XLA-00241] c 31 N70-37986

**DEMAGNETIZATION**  
Tumbler system to produce random motion  
[NASA-CASE-XGS-02437] c 15 N69-21472

**DEMODULATION**  
Phase quadrature-plural channel data transmission system Patent  
[NASA-CASE-XAC-06302] c 08 N71-19763

Facsimile video remodulation network  
[NASA-CASE-GSC-10185-1] c 07 N72-12081

Quadrature phase demodulation  
[NASA-CASE-GSC-12137-1] c 33 N78-32338

**DEMODULATORS**  
Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333

Frequency shift keyed demodulator Patent  
[NASA-CASE-XGS-02889] c 07 N71-11282

Bi-carrier demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c 07 N71-11298

Demodulation system Patent  
[NASA-CASE-XAC-04030] c 10 N71-19472

Laser calibrator Patent  
[NASA-CASE-XLA-03410] c 16 N71-25914

Frequency modulation demodulator threshold extension device Patent  
[NASA-CASE-MS-C-12165-1] c 07 N71-33696

Full wave modulator-demodulator amplifier apparatus — for generating rectified output signal  
[NASA-CASE-FRC-10072-1] c 33 N74-14939

Unbalanced quadrature demodulator  
[NASA-CASE-MS-C-14840-1] c 32 N77-24331

Digital demodulator-correlator  
[NASA-CASE-NPO-13982-1] c 32 N79-14267

Self-calibrating threshold detector  
[NASA-CASE-MS-C-16370-1] c 35 N81-19427

Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716

Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570

**DENDRITIC CRYSTALS**  
A method of increasing minority carrier lifetime in silicon web or the like — VLSI semiconductor devices and high performance solar cells  
[NASA-CASE-NPO-15530-1] c 76 N82-24993

**DENSIFICATION**  
Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MS-C-18737-1] c 25 N81-29180

**DENSITOMETERS**  
Apparatus having coaxial capacitor structure for measuring fluid density Patent  
[NASA-CASE-XLE-00143] c 14 N70-36618

Densitometer Patent  
[NASA-CASE-XLE-00688] c 14 N70-41330

Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c 35 N75-12271

**DENSITY (MASS/VOLUME)**  
A stable density-stratification solar pond  
[NASA-CASE-NPO-15419-1] c 44 N81-27599

Non-toxic inert analog glass compositions of high modulus  
[NASA-CASE-HQN-10328-2] c 27 N82-29454

**DENSITY DISTRIBUTION**  
Apparatus for increasing ion engine beam density Patent  
[NASA-CASE-XLE-00519] c 28 N70-41576

Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector — for determining density of gas  
[NASA-CASE-ARC-10631-1] c 74 N76-20958

**DENSITY MEASUREMENT**  
Apparatus having coaxial capacitor structure for measuring fluid density Patent  
[NASA-CASE-XLE-00143] c 14 N70-36618

Densitometer Patent  
[NASA-CASE-XLE-00688] c 14 N70-41330

Determining particle density using known material Hugoniot curves  
[NASA-CASE-LAR-11059-1] c 76 N75-12810

Selective image area control of X-ray film exposure density  
[NASA-CASE-NPO-13808-1] c 35 N78-15461

Device for determining frost depth and density  
[NASA-CASE-MFS-25754-1] c 31 N82-26503

**DENTISTRY**  
Process for the preparation of brushite crystals  
[NASA-CASE-ERC-10338] c 04 N72-33072

Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862

**DEOXYGENATION**  
Electrocatalyst for oxygen reduction  
[NASA-CASE-HQN-10537-1] c 06 N72-10138

**DEPLOYMENT**  
Minimech self-deploying boom mechanism  
[NASA-CASE-GSC-10566-1] c 15 N72-18477

Deployable solar cell array  
[NASA-CASE-NXP-10883] c 31 N72-22874

Antenna deployment mechanism for use with a spacecraft — extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183

High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272

**DEPOSITION**  
Means and methods of depositing thin films on substrates Patent  
[NASA-CASE-XNP-00595] c 15 N70-34967

Monitoring deposition of films  
[NASA-CASE-MFS-20675] c 26 N73-26751

Production of pure metals  
[NASA-CASE-LEW-10906-1] c 25 N74-30502

**DEPTH MEASUREMENT**  
Device for determining frost depth and density  
[NASA-CASE-MFS-25754-1] c 31 N82-26503

**DESCENT**  
Emergency descent device  
[NASA-CASE-MFS-23074-1] c 54 N77-21844

**DESIGN ANALYSIS**  
Airfoil shape for flight at subsonic speeds — design analysis and aerodynamic characteristics of the GAW-1 airfoil  
[NASA-CASE-LAR-10585-1] c 02 N76-22154

Snap-in compressible biomedical electrode  
[NASA-CASE-MS-C-14623-1] c 52 N77-28717

**DESTABILIZATION**  
Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N81-22048

**DESTRUCTIVE TESTS**  
Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12458-1] c 09 N81-31230

**DESULFURIZING**  
Coal desulfurization process  
[NASA-CASE-NPO-13937-1] c 44 N78-31527

Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154

Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246

Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 28 N82-12240

Crude oil desulfurization  
[NASA-CASE-NPO-14542-1] c 25 N82-23282

Autocatalytic coal liquefaction process  
[NASA-CASE-NPO-14876-2] c 28 N82-25394

Coal desulfurization by aqueous chlorination  
[NASA-CASE-NPO-14902-1] c 25 N82-29371

**DETECTION**  
Heated element fluid flow sensor Patent  
[NASA-CASE-MS-C-12084-1] c 12 N71-17569

Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573

Metallic intrusion detector system  
[NASA-CASE-ARC-10265-1] c 10 N72-28240

Cosmic dust or other similar outer space particles impact location detector  
[NASA-CASE-GSC-11291-1] c 25 N72-33696



- Bacteria detection instrument and method  
[NASA-CASE-GSC-11533-1] c 14 N73-13435
- Short range laser obstacle detector --- for surface vehicles using laser diode array  
[NASA-CASE-NPO-11856-1] c 36 N74-15145
- Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612
- Method and device for destructive detection of a substance --- useful in determining the concentration of carbon fibers or pollutant particles  
[NASA-CASE-NPO-14940-1] c 35 N80-21723
- Photoelectric detection system --- manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545
- Apparatus and process for microbial detection and enumeration  
[NASA-CASE-LAR-12709-1] c 35 N82-28604
- DETECTORS**
- Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996
- Detector panels-micrometeoroid impact Patent  
[NASA-CASE-XLA-05906] c 31 N71-16221
- Pulse activated polarographic hydrogen detector Patent  
[NASA-CASE-XMF-06531] c 14 N71-17575
- Light position locating system Patent  
[NASA-CASE-XNP-01059] c 23 N71-21821
- Method for detecting leaks in hermetically sealed containers Patent  
[NASA-CASE-ERC-10045] c 15 N71-24910
- Precipitation detector Patent  
[NASA-CASE-XLA-02619] c 10 N71-26334
- Hydrogen fire blink detector  
[NASA-CASE-MFS-15063] c 14 N72-25412
- Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484
- Multiple pass reimagining optical system  
[NASA-CASE-ARC-10194-1] c 23 N73-20741
- Meteoroid detector  
[NASA-CASE-LAR-10483-1] c 14 N73-32327
- Deployable pressurized cell structure for a micrometeoroid detector  
[NASA-CASE-LAR-10295-1] c 35 N74-21062
- Modulated hydrogen ion flame detector  
[NASA-CASE-ARC-10322-1] c 35 N76-18403
- Coal-rock interface detector  
[NASA-CASE-MFS-23725-1] c 43 N79-31706
- DETERGENTS**
- Anti-fog composition --- for prevention of fogging on surfaces such as space helmet visors and windshields  
[NASA-CASE-MS-C-13530-2] c 23 N75-14834
- DETONATION**
- Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425
- DETONATION WAVES**
- Continuous detonation reaction engine Patent  
[NASA-CASE-XMF-06926] c 28 N71-22983
- DEUTERIUM**
- Analysis of hydrogen-deuterium mixtures  
[NASA-CASE-NPO-11322] c 06 N72-25146
- Deuterium pass through target --- neutron emitting target  
[NASA-CASE-LEW-11866-1] c 72 N76-15860
- Method and apparatus for producing concentric hollow spheres  
[NASA-CASE-NPO-14596-3] c 27 N82-26461
- DIAGNOSIS**
- Coupling apparatus for ultrasonic medical diagnostic system  
[NASA-CASE-NPO-13935-1] c 52 N79-14751
- Medical diagnosis system and method with multispectral imaging --- depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783
- DIAGRAMS**
- Phototransistor  
[NASA-CASE-MFS-20407] c 09 N73-19235
- DIALS**
- Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716
- DIALYSIS**
- Dialysis system --- using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687
- DIAMINES**
- Elastomeric silazane polymers and process for preparing the same Patent  
[NASA-CASE-XMF-04133] c 06 N71-20717
- Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740
- Siloxane containing epoxide compounds  
[NASA-CASE-MFS-13994-2] c 06 N72-25148
- Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids  
[NASA-CASE-LEW-11325-1] c 06 N73-27980
- Mixed diamines for lower melting addition polyimide preparation and utilization  
[NASA-CASE-LAR-12054-1] c 27 N79-33316
- Method for preparing addition type polyimide prepreps  
[NASA-CASE-LAR-12054-2] c 27 N81-14078
- DIAMONDS**
- Apparatus for making diamonds  
[NASA-CASE-MFS-20698] c 15 N72-20446
- Process for making diamonds  
[NASA-CASE-MFS-20698-2] c 15 N73-19457
- DIAPHRAGMS (MECHANICS)**
- Measuring device Patent  
[NASA-CASE-XMS-01546] c 14 N70-40233
- Reinforcing means for diaphragms Patent  
[NASA-CASE-XNP-01962] c 32 N70-41370
- Self-sealing, unbonded, rocket motor nozzle closure Patent  
[NASA-CASE-XLA-02651] c 28 N70-41967
- Means for controlling rupture of shock tube diaphragms Patent  
[NASA-CASE-XAC-00731] c 11 N71-15960
- Fast opening diaphragm Patent  
[NASA-CASE-XLA-03660] c 15 N71-21060
- Inertia diaphragm pressure transducer Patent  
[NASA-CASE-XAC-02981] c 14 N71-21072
- Convoluting device for forming convolutions and the like Patent  
[NASA-CASE-XNP-05297] c 15 N71-23811
- Differential pressure control  
[NASA-CASE-MFS-14216] c 14 N73-13418
- DIATOMIC GASES**
- Diatomic infrared gasdynamic laser --- for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c 36 N75-31426
- DICHROISM**
- Dichroic plate --- as bandpass filters  
[NASA-CASE-NPO-13506-1] c 35 N76-15435
- Microwave dichroic plate  
[NASA-CASE-GSC-12171-1] c 33 N79-28416
- DICKE RADIOMETERS**
- Distributed-switch Dicke radiometers  
[NASA-CASE-GSC-12219-1] c 35 N80-18359
- DIELECTRIC PROPERTIES**
- Capacitive tank gaging apparatus being independent of liquid distribution  
[NASA-CASE-MFS-21629] c 14 N72-22442
- Fine particulate capture device  
[NASA-CASE-LEW-11583-1] c 35 N79-17192
- DIELECTRICS**
- Method for producing a solar cell having an integral protective covering  
[NASA-CASE-XGS-04531] c 03 N69-24267
- Temperature sensitive capacitor device  
[NASA-CASE-XNP-09750] c 14 N69-39937
- Space vehicle electrical system Patent  
[NASA-CASE-XMF-00517] c 03 N70-34157
- Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984
- Broadband microwave waveguide window Patent  
[NASA-CASE-XNP-08880] c 09 N71-24808
- Laser machining apparatus Patent  
[NASA-CASE-HQN-10541-2] c 15 N71-27135
- Quasi-optical microwave component Patent  
[NASA-CASE-ERC-10011] c 07 N71-29065
- Method of manufacturing semiconductor devices using refractory dielectrics  
[NASA-CASE-XER-08476-1] c 26 N72-17820
- Screened circuit capacitors  
[NASA-CASE-LAR-10294-1] c 26 N72-28762
- Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c 32 N74-11000
- Electrostatic measurement system --- for contact-electrifying a dielectric  
[NASA-CASE-MFS-22129-1] c 33 N75-18477
- Method and apparatus for measurement of trap density and energy distribution in dielectric films  
[NASA-CASE-NPO-13443-1] c 76 N76-20994
- Preparation of dielectric coating of variable dielectric constant by plasma polymerization  
[NASA-CASE-ARC-10892-2] c 27 N79-14214
- Dielectric-loaded waveguide circulator for cryogenically cooled and cascaded maser waveguide structures  
[NASA-CASE-NPO-14254-1] c 36 N80-18372
- DIES**
- Convoluting device for forming convolutions and the like Patent  
[NASA-CASE-XNP-05297] c 15 N71-23811
- Extrusion die for refractory metals Patent  
[NASA-CASE-XLE-06773] c 15 N71-23817
- Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12618-1] c 37 N81-16470
- DIESEL ENGINES**
- Diesel engine catalytic combustor system --- turbocharging  
[NASA-CASE-LEW-12995-1] c 37 N80-26659
- DIETS**
- Reduction of blood serum cholesterol  
[NASA-CASE-NPO-12119-1] c 52 N75-15270
- DIFFERENTIAL AMPLIFIERS**
- Temperature compensated solid state differential amplifier Patent  
[NASA-CASE-XAC-00435] c 09 N70-35440
- Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c 10 N71-18772
- Multi-channel temperature measurement amplification system --- solar heating systems  
[NASA-CASE-MFS-23775-1] c 44 N82-16474
- DIFFERENTIAL INTERFEROMETRY**
- Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587
- DIFFERENTIAL PRESSURE**
- Relief valve  
[NASA-CASE-XMS-05894-1] c 15 N69-21924
- Apparatus for ejection of an instrument cover  
[NASA-CASE-XMF-04132] c 15 N69-27502
- Differential sound level meter  
[NASA-CASE-LAR-12106-1] c 71 N78-14867
- Differential optoacoustic absorption detector  
[NASA-CASE-NPO-13759-1] c 74 N78-17867
- System for use in conducting wake investigation for a wing in flight --- differential pressure measurements for drag investigations  
[NASA-CASE-FRC-11024-1] c 02 N80-28300
- DIFFERENTIATORS**
- Window comparator  
[NASA-CASE-FRC-10090-1] c 33 N78-18308
- DIFFRACTION**
- Optical mirror apparatus Patent  
[NASA-CASE-ERC-10001] c 23 N71-24868
- DIFFRACTION PATTERNS**
- Fringe counter for interferometers Patent  
[NASA-CASE-LAR-10204] c 14 N71-27215
- DIFFRACTOMETERS**
- Dual purpose optical instrument capable of simultaneously acting as spectrometer and diffractometer  
[NASA-CASE-XNP-05231] c 14 N73-28491
- DIFFUSE RADIATION**
- Transmitting and reflecting diffuser --- using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879
- DIFFUSERS**
- Application of semiconductor diffusants to solar cells by screen printing  
[NASA-CASE-LEW-12775-1] c 44 N79-11468
- DIFFUSION**
- A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148
- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-10337] c 15 N71-24046
- Transmitting and reflecting diffuser --- for ultraviolet light  
[NASA-CASE-LAR-10385-2] c 70 N74-13436
- DIFFUSION PUMPS**
- Trap for preventing diffusion pump backstreaming  
[NASA-CASE-GSC-10518-1] c 15 N72-22489
- Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c 52 N74-22771
- DIFFUSION WELDING**
- Thermal compression bonding of interconnectors  
[NASA-CASE-GSC-10303] c 15 N72-22487
- Bonding of reinforced Teflon to metals  
[NASA-CASE-MFS-20482] c 15 N72-22492
- Enhanced diffusion welding  
[NASA-CASE-LEW-11388-1] c 15 N73-32358
- Method of fluxless brazing and diffusion bonding of aluminum containing components  
[NASA-CASE-MS-C-14435-1] c 37 N76-18455
- Superplastically formed diffusion bonded metallic structure  
[NASA-CASE-FRC-11026-1] c 24 N82-24296
- DIGITAL COMMAND SYSTEMS**
- Digitally controlled frequency synthesizer Patent  
[NASA-CASE-XGS-02317] c 09 N71-23525
- System for maintaining a motor at a predetermined speed utilizing digital feedback means Patent  
[NASA-CASE-XMF-06892] c 09 N71-24805
- Digital filter for reducing sampling jitter in digital control systems Patent  
[NASA-CASE-NPO-11088] c 08 N71-29034
- DIGITAL COMPUTERS**
- Disk pack cleaning table Patent Application  
[NASA-CASE-LAR-10590-1] c 15 N70-26819
- Binary number sorter Patent  
[NASA-CASE-NPO-10112] c 08 N71-12502
- Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c 08 N71-12505
- Electronic checkout system for space vehicles Patent  
[NASA-CASE-XKS-08012-2] c 31 N71-15566



- Error correcting method and apparatus Patent  
[NASA-CASE-XNP-02748] c 08 N71-22749
- Serial digital decoder Patent  
[NASA-CASE-NPO-10150] c 08 N71-24650
- Digital memory sense amplifying means Patent  
[NASA-CASE-XNP-01012] c 08 N71-28925
- Redundant memory organization Patent  
[NASA-CASE-GSC-10564] c 10 N71-29135
- High speed direct binary to binary coded decimal converter and scaler  
[NASA-CASE-KSC-10595] c 08 N73-12176
- Fault tolerant clock apparatus utilizing a controlled minority of clock elements  
[NASA-CASE-MSC-12531-1] c 35 N75-30504
- Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-1] c 60 N77-14751
- Memory device for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-2] c 60 N78-10709
- Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212

**DIGITAL DATA**

- Phase-shift data transmission system having a pseudo-noise SYNC code modulated with the data in a single channel Patent  
[NASA-CASE-XNP-00911] c 08 N70-41961
- Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c 08 N71-19420
- Digital telemetry system Patent  
[NASA-CASE-XGS-01812] c 07 N71-23001
- Transient augmentation circuit for pulse amplifiers Patent  
[NASA-CASE-XNP-01068] c 10 N71-28739
- Transition tracking bit synchronization system  
[NASA-CASE-NPO-10844] c 07 N72-20140
- Digital control and information system  
[NASA-CASE-NPO-11016] c 08 N72-31226
- Digital plus analog output encoder  
[NASA-CASE-GSC-12115-1] c 62 N76-31946
- Digital data reformatter/deserializer  
[NASA-CASE-NPO-13676-1] c 60 N79-20751
- Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N82-29319

**DIGITAL FILTERS**

- Signal detection and tracking apparatus Patent  
[NASA-CASE-XGS-03502] c 10 N71-20852
- Digital filter for reducing sampling jitter in digital control systems Patent  
[NASA-CASE-NPO-11088] c 08 N71-29034
- Counting digital filters  
[NASA-CASE-NPO-11821-1] c 08 N73-26175
- Filtering device — removing electromagnetic noise from voice communication signals  
[NASA-CASE-MFS-22729-1] c 32 N76-21366

**DIGITAL INTEGRATORS**

- Digital automatic gain amplifier  
[NASA-CASE-KSC-11008-1] c 33 N79-22373

**DIGITAL RADAR SYSTEMS**

- Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297

**DIGITAL SPACECRAFT TELEVISION**

- Digital television camera control system Patent  
[NASA-CASE-XNP-01472] c 14 N70-41807

**DIGITAL SYSTEMS**

- Light sensitive digital aspect sensor Patent  
[NASA-CASE-XGS-00359] c 14 N70-34158
- Full binary adder Patent  
[NASA-CASE-XGS-00639] c 08 N70-34787
- Digital telemetry system Patent  
[NASA-CASE-XGS-01812] c 07 N71-23001
- Drive circuit utilizing two cores Patent  
[NASA-CASE-XNP-01318] c 10 N71-23033
- Noninterruptible digital counting system Patent  
[NASA-CASE-XNP-09759] c 08 N71-24891
- Digital memory in which the driving of each word location is controlled by a switch core Patent  
[NASA-CASE-XNP-01466] c 10 N71-26434
- Digital quasi-exponential function generator  
[NASA-CASE-NPO-11130] c 08 N72-20176
- Digital function generator  
[NASA-CASE-NPO-11104] c 08 N72-22165
- Digital video display system using cathode ray tube  
[NASA-CASE-NPO-11342] c 09 N72-25248
- Digital slope threshold data compressor  
[NASA-CASE-NPO-11630] c 08 N72-33172
- Data processor with conditionally supplied clock signals  
[NASA-CASE-GSC-10975-1] c 08 N73-13187
- Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c 10 N73-26229

- Pseudonoise (PN) synchronization of data system with derivation of clock frequency from received signal for clocking receiver PN generator  
[NASA-CASE-XNP-03623] c 09 N73-28084
- Digital second-order phase-locked loop  
[NASA-CASE-NPO-11905-1] c 33 N74-12887
- Digital controller for a Baum folding machine — providing automatic counting and machine shutoff  
[NASA-CASE-LAR-10688-1] c 37 N74-21056
- Digital transmitter for data bus communications system  
[NASA-CASE-MSC-14558-1] c 32 N75-21486
- Automatic character skew and spacing checking network — of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c 33 N76-18353
- Anti-multipath digital signal detector  
[NASA-CASE-LAR-11827-1] c 32 N77-10392
- Multiple rate digital command detection system with range clean-up capability  
[NASA-CASE-NPO-13753-1] c 32 N77-20289
- Open loop digital frequency multiplier  
[NASA-CASE-MSC-12709-1] c 33 N77-24375
- Bit error rate measurement above and below bit rate tracking threshold  
[NASA-CASE-MSC-12743-1] c 32 N79-10263
- Apparatus and method for stabilized phase detection for binary signal tracking loops  
[NASA-CASE-MSC-16461-1] c 33 N79-11313
- Digital demodulator-correlator  
[NASA-CASE-NPO-13982-1] c 32 N79-14267
- Memory-based frame synchronizer — for digital communication systems  
[NASA-CASE-GSC-12430-1] c 60 N82-16747
- Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570
- Random digital encryption secure communication system  
[NASA-CASE-MSC-16462-1] c 32 N82-31583

**DIGITAL TECHNIQUES**

- Digital frequency discriminator Patent  
[NASA-CASE-MFS-14322] c 08 N71-18692
- Exclusive-Or digital logic module Patent  
[NASA-CASE-XLA-07732] c 08 N71-18751
- Horizon sensor with a plurality of fixedly positioned radiation compensated radiation sensitive detectors Patent  
[NASA-CASE-XNP-06957] c 14 N71-21088
- Digital cardiostachometer system Patent  
[NASA-CASE-XMS-02399] c 05 N71-22896
- Digital synchronizer Patent  
[NASA-CASE-NPO-10851] c 07 N71-24613
- Fringe counter for interferometers Patent  
[NASA-CASE-LAR-10204] c 14 N71-27215
- Rate data encoder  
[NASA-CASE-LAR-10128-1] c 08 N73-20217
- Digital communication system  
[NASA-CASE-MSC-13912-1] c 32 N74-30524
- Digital phase-locked loop  
[NASA-CASE-GSC-11623-1] c 33 N75-25040
- Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349
- Random digital encryption secure communication system  
[NASA-CASE-MSC-16462-1] c 32 N82-31583

**DIGITAL TO ANALOG CONVERTERS**

- Rate augmented digital to analog converter Patent  
[NASA-CASE-XLA-07828] c 08 N71-27057
- Buffered analog converter  
[NASA-CASE-KSC-10397] c 08 N72-25206
- Digital to analog conversion apparatus  
[NASA-CASE-MSC-12458-1] c 08 N73-32081
- Smoother filter for digital to analog conversion  
[NASA-CASE-FRC-11025-1] c 33 N82-24417

**DIGITAL TRANSDUCERS**

- Digital to analog conversion apparatus  
[NASA-CASE-MSC-12458-1] c 08 N73-32081
- Angle detector  
[NASA-CASE-ARC-11036-1] c 35 N78-32395

**DIISOCYANATES**

- Polyurethanes of fluorene containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N73-30099
- Polyurethanes from fluoroalkyl propylene glycol polyethers  
[NASA-CASE-MFS-10506] c 06 N73-30100
- Fluorene containing polyurethane  
[NASA-CASE-MFS-10509] c 06 N73-30103

**DIMENSIONAL MEASUREMENT**

- Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

**DIMENSIONS**

- Projection system for display of parallax and perspective  
[NASA-CASE-MFS-23194-1] c 35 N78-17357

**DIODES**

- Diode and protection fuse unit Patent  
[NASA-CASE-XKS-03381] c 09 N71-22796
- Protection of serially connected solar cells against open circuits by the use of shunting diode Patent  
[NASA-CASE-XLE-04535] c 03 N71-23354
- Shielded cathode mode bulk effect devices  
[NASA-CASE-ERC-10119] c 26 N72-21701
- Fast response low power drain logic circuits  
[NASA-CASE-GSC-10878-1] c 10 N72-22236
- Method and apparatus for detecting surface ions on silicon diodes and transistors  
[NASA-CASE-ERC-10325] c 15 N72-25457
- Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10467-1] c 09 N73-14214
- Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c 09 N73-27150
- High isolation RF signal selection switches  
[NASA-CASE-NPO-13081-1] c 33 N74-22814
- Logarithmic circuit with wide dynamic range  
[NASA-CASE-GSC-12145-1] c 33 N78-32339
- Regulated high efficiency, lightweight capacitor-diode multiplier dc to dc converter  
[NASA-CASE-LEW-12791-1] c 33 N78-32341
- Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029
- Arrangement for damping the resonance in a laser diode  
[NASA-CASE-NPO-15980-1] c 36 N82-28618

**DIPLOLE ANTENNAS**

- Circularly polarized antenna  
[NASA-CASE-ERC-10214] c 09 N72-31235
- Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336

**DIRECT CURRENT**

- Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c 03 N69-21330
- Bus voltage compensation circuit for controlling direct current motor  
[NASA-CASE-XMS-04215-1] c 09 N69-39987
- Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c 03 N71-12255
- A dc-coupled noninverting one-shot Patent  
[NASA-CASE-XNP-09450] c 10 N71-18723
- Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c 10 N71-18772
- Frequency control network for a current feedback oscillator Patent  
[NASA-CASE-GSC-10041-1] c 10 N71-19418
- Self-repeating plasma generator having communicating annular and linear arc discharge passages Patent  
[NASA-CASE-XLA-03103] c 25 N71-21693
- Positive dc to positive dc converter Patent  
[NASA-CASE-XMF-14301] c 09 N71-23188
- Positive dc to negative dc converter Patent  
[NASA-CASE-XMF-08217] c 03 N71-23239
- Blood pressure measuring system for separating and separately recording dc signal and an ac signal Patent  
[NASA-CASE-XMS-06061] c 05 N71-23317
- Radio frequency coaxial high pass filter Patent  
[NASA-CASE-XGS-01418] c 09 N71-23573
- Brushless direct current tachometer Patent  
[NASA-CASE-MFS-20385] c 09 N71-24904
- Inverter with means for base current shaping for sweeping charge carriers from base region Patent  
[NASA-CASE-XGS-06226] c 10 N71-25950
- Dual polarity full wave dc motor drive Patent  
[NASA-CASE-XNP-07477] c 09 N71-26092
- A dc motor speed control system Patent  
[NASA-CASE-MFS-14610] c 09 N71-28886
- Cyclic switch Patent  
[NASA-CASE-LEW-10155-1] c 09 N71-29035
- Load-insensitive electrical device  
[NASA-CASE-XER-11046] c 09 N72-22203
- A dc to ac to dc converter having transistor synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c 09 N72-25253
- Electric motive machine including magnetic bearing  
[NASA-CASE-XGS-07805] c 15 N72-33476
- Powerplexer  
[NASA-CASE-MSC-12396-1] c 03 N73-31988
- Bio-isolated dc operational amplifier — for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c 33 N74-21851
- Load insensitive electrical device — power converters for supplying direct current at one voltage from a source at another voltage  
[NASA-CASE-XER-11046-2] c 33 N74-22864
- Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c 32 N77-12239
- Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c 33 N77-26386



- Time domain phase measuring apparatus  
[NASA-CASE-GSC-12228-1] c 33 N79-10338
- Direct current transformer  
[NASA-CASE-MFS-23659-1] c 33 N79-17133
- Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393
- Controller for computer control of brushless dc motors  
[NASA-CASE-NPO-13970-1] c 33 N81-20352
- Direct current ballast circuit for metal halide lamp  
[NASA-CASE-MSC-18407-1] c 33 N82-24427
- Simplified dc to dc converter  
[NASA-CASE-LEW-13495-1] c 33 N82-24432
- DIRECT LIFT CONTROLS**
- Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106
- DIRECT POWER GENERATORS**
- Energy conversion apparatus Patent  
[NASA-CASE-XLE-00212] c 03 N70-34134
- Thermal pump-compressor for space use Patent  
[NASA-CASE-XLA-00377] c 33 N71-17610
- Positive dc to negative dc converter Patent  
[NASA-CASE-XMF-08217] c 03 N71-23239
- Unsaturating saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24893
- Load insensitive electrical device — power converters for supplying direct current at one voltage from a source at another voltage  
[NASA-CASE-XER-11046-2] c 33 N74-22864
- DIRECTIONAL ANTENNAS**
- Mechanical coordinate converter Patent  
[NASA-CASE-XNP-00614] c 14 N70-36907
- Weatherproof helix antenna Patent  
[NASA-CASE-XKS-08485] c 07 N71-19493
- Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c 07 N71-19854
- Reversible motion drive system Patent  
[NASA-CASE-NPO-10173] c 15 N71-24696
- Variable beamwidth antenna — with multiple beam, variable feed system  
[NASA-CASE-GSC-11862-1] c 32 N76-18295
- Suspension system for a wheel rolling on a flat track — bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587
- DIRECTIONAL CONTROL**
- Gimbaled, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c 28 N70-34162
- Omnidirectional wheel  
[NASA-CASE-MFS-21309-1] c 37 N74-18125
- Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106
- DIRECTIONAL SOLIDIFICATION (CRYSTALS)**
- Preparation of monocrystalline alloys having a controlled microstructure by directional solidification under dopant-induced interface breakdown  
[NASA-CASE-MFS-23816-1] c 26 N80-23419
- Reusable thermal cycling clamp — holders for directional solidification experiments  
[NASA-CASE-LAR-12868-1] c 27 N82-18390
- DIRECTIONAL STABILITY**
- Nose gear steering system for vehicle with main skids Patent  
[NASA-CASE-XLA-01804] c 02 N70-34160
- System for imposing directional stability on a rocket-propelled vehicle  
[NASA-CASE-MFS-21311-1] c 20 N76-21275
- DISCONNECT DEVICES**
- Gas actuated bolt disconnect Patent  
[NASA-CASE-XLA-00326] c 03 N70-34667
- Umbilical disconnect Patent  
[NASA-CASE-XLA-00711] c 03 N71-12258
- Remote controlled tubular disconnect Patent  
[NASA-CASE-XLA-01396] c 03 N71-12259
- Quick release connector Patent  
[NASA-CASE-XLA-01141] c 15 N71-13789
- Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489
- Separation simulator Patent  
[NASA-CASE-XKS-04631] c 10 N71-23663
- Duct coupling for single-handed operation Patent  
[NASA-CASE-MFS-20395] c 15 N71-24903
- Breakaway connector  
[NASA-CASE-NPO-11140] c 15 N72-17455
- Torsional disconnect unit  
[NASA-CASE-NPO-10704] c 15 N72-20445
- Frangible link  
[NASA-CASE-MSC-11849-1] c 15 N72-22488
- Quick disconnect coupling  
[NASA-CASE-NPO-11202] c 15 N72-25450
- Quick disconnect filter coupling  
[NASA-CASE-MFS-22323-1] c 37 N76-14463
- Positive isolation disconnect  
[NASA-CASE-MSC-16043-1] c 37 N79-11402
- Slide release mechanism — for the external tank  
[NASA-CASE-MSC-20080-1] c 37 N82-31688
- DISCONTINUITY**
- Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c 32 N71-25360
- DISCRIMINATORS**
- Phase detector assembly Patent  
[NASA-CASE-XMF-00701] c 09 N70-40272
- Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537
- Digital frequency discriminator Patent  
[NASA-CASE-MFS-14322] c 08 N71-18692
- Comparator for the comparison of two binary numbers Patent  
[NASA-CASE-XNP-04819] c 08 N71-23295
- Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-3] c 33 N75-19520
- Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-2] c 33 N75-25041
- Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539
- DISINTEGRATION**
- Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N82-26961
- DISPENSERS**
- Liquid aerosol dispenser  
[NASA-CASE-MFS-20829] c 12 N72-21310
- Potable water dispenser  
[NASA-CASE-MFS-21115-1] c 54 N74-12779
- Lyophilized spore dispenser  
[NASA-CASE-LAR-10544-1] c 37 N74-13178
- Metering gun for dispensing precisely measured charges of fluid  
[NASA-CASE-MFS-21163-1] c 54 N74-17853
- Automatic fluid dispenser  
[NASA-CASE-ARC-10820-1] c 35 N78-19466
- DISPERSING**
- Shock tube powder dispersing apparatus Patent  
[NASA-CASE-XLE-04846] c 17 N71-24911
- Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 34 N82-24448
- DISPERSIONS**
- Preparation of alkali metal dispersions  
[NASA-CASE-XNP-08876] c 17 N73-28573
- DISPLACEMENT**
- Bimetallic fluid displacement apparatus — for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10411-1] c 35 N74-15126
- DISPLACEMENT MEASUREMENT**
- Null-type vacuum microbalance Patent  
[NASA-CASE-XAC-00472] c 15 N70-40180
- Self-calibrating displacement transducer Patent  
[NASA-CASE-XLA-00781] c 09 N71-22999
- Angular displacement indicating gas bearing support system Patent  
[NASA-CASE-XLA-09346] c 15 N71-28740
- Apparatus for remote measurement of displacement of marks on a specimen undergoing a tensile test  
[NASA-CASE-NPO-10778] c 14 N72-11364
- Miniature muscle displacement transducer  
[NASA-CASE-NPO-13519-1] c 33 N76-19338
- Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072
- DISPLAY DEVICES**
- Integrated time shared instrumentation display Patent  
[NASA-CASE-XLA-01852] c 08 N71-12507
- Energy management system for glider type vehicle Patent  
[NASA-CASE-XFR-00756] c 02 N71-13421
- Fluidic-thermochromic display device Patent  
[NASA-CASE-ERC-10031] c 12 N71-18603
- Display for binary characters Patent  
[NASA-CASE-XGS-04987] c 08 N71-20571
- Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882
- Optical monitor panel Patent  
[NASA-CASE-XKS-03509] c 14 N71-23175
- BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890
- Noninterruptible digital counting system Patent  
[NASA-CASE-XNP-09759] c 08 N71-24891
- Analog signal integration and reconstruction system Patent  
[NASA-CASE-NPO-10344] c 10 N71-26544
- Plasma fluidic hybrid display Patent  
[NASA-CASE-ERC-10100] c 09 N71-33519
- System for quantizing graphic displays  
[NASA-CASE-NPO-10745] c 08 N72-22164
- Digital video display system using cathode ray tube  
[NASA-CASE-NPO-11342] c 09 N72-25248
- Scientific experiment flexible mount  
[NASA-CASE-MSC-12372-1] c 31 N72-25842
- Display system  
[NASA-CASE-ERC-10350] c 14 N73-20474
- Transparent switchboard  
[NASA-CASE-MSC-13746-1] c 10 N73-32143
- Recorder/processor apparatus — for optical data processing  
[NASA-CASE-GSC-11553-1] c 35 N74-15831
- Rotating raster generator  
[NASA-CASE-FRC-10071-1] c 32 N74-20813
- G-load measuring and indicator apparatus — for aircraft  
[NASA-CASE-ARC-10806] c 06 N74-27872
- X-Y alphanumeric character generator for oscilloscopes  
[NASA-CASE-GSC-11582-1] c 33 N75-19517
- Binocular device for displaying numerical information in field of view  
[NASA-CASE-LAR-11782-1] c 74 N77-20882
- Particle parameter analyzing system — x-y plotter circuits and display  
[NASA-CASE-XLE-06094] c 33 N78-17293
- Projection system for display of parallax and perspective  
[NASA-CASE-MFS-23194-1] c 35 N78-17357
- Full color hybrid display for aircraft simulators — landing aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083
- Chromatically corrected virtual image display — lens design for flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N79-14892
- Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580
- System and method for obtaining wide screen Schlieren photographs  
[NASA-CASE-NPO-14174-1] c 74 N79-20856
- Chromatically corrected virtual image visual display — reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185
- System for a displaying at a remote station data generated at a central station and for powering the remote station from the central station  
[NASA-CASE-GSC-12411-1] c 33 N81-14221
- Real-time 3D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N82-10862
- System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
[NASA-CASE-FRC-11005-1] c 06 N82-16075
- Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212
- DISSIPATION**
- Voltage regulator with plural parallel power source sections Patent  
[NASA-CASE-GSC-10891-1] c 10 N71-26626
- DISSOCIATION**
- Solar hydrogen generator  
[NASA-CASE-LAR-11361-1] c 44 N77-22607
- DISSOLVING**
- Zero gravity liquid mixer  
[NASA-CASE-LAR-10195-1] c 15 N73-19458
- DISTANCE MEASURING EQUIPMENT**
- Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11194] c 08 N72-25209
- Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175
- Terminal guidance sensor system — space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519
- DISTILLATION EQUIPMENT**
- Compact solar still Patent  
[NASA-CASE-XMS-04533] c 15 N71-23088
- Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c 15 N71-27184
- Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129
- DISTRIBUTED AMPLIFIERS**
- Cascaded complementary pair broadband transistor amplifiers Patent  
[NASA-CASE-NPO-10003] c 10 N71-26415
- DISTRIBUTORS**
- High voltage distributor  
[NASA-CASE-GSC-11849-1] c 33 N76-16332
- DIVERGENT NOZZLES**
- Jet exhaust noise suppressor  
[NASA-CASE-LEW-11286-1] c 07 N74-27490
- DIVERTERS**
- Flow diverter valve and flow diversion method  
[NASA-CASE-HQN-00573-1] c 37 N79-33468
- DIVIDERS**
- A synchronous binary array divider  
[NASA-CASE-ERC-10180-1] c 60 N74-20836
- DOCUMENT STORAGE**
- File card marker Patent  
[NASA-CASE-XLA-02705] c 08 N71-15908



## DOORS

- Emergency escape system Patent  
[NASA-CASE-MSC-12086-1] c 05 N71-12345  
Fiberglass/epoxy composite automotive door structure including a glass-reinforced intrusion strip  
[NASA-CASE-NPO-15057-1] c 24 N81-19230  
CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690

## DOPPLER EFFECT

- Doppler frequency spread correction device for multiplex transmissions  
[NASA-CASE-XGS-02749] c 07 N69-39978  
Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-MFS-20386] c 21 N71-19212  
Doppler compensation by shifting transmitted object frequency within limits  
[NASA-CASE-GSC-10087-4] c 07 N73-20174  
Doppler shift system — system for measuring velocities of radiating particles  
[NASA-CASE-HQN-10740-1] c 72 N74-19310  
Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510  
An electro-optical Doppler tracker means and method for optical correlation of synthetic aperture radar data  
[NASA-CASE-NPO-14998-1] c 33 N81-15194  
Method and apparatus for Delta K synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N82-28502

## DOPPLER RADAR

- Cooperative Doppler radar system Patent  
[NASA-CASE-LAR-10403] c 21 N71-11766  
Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N80-32607  
Doppler radar having phase modulation of both transmitted and reflected return signals — ranging  
[NASA-CASE-MSC-18675-1] c 32 N81-29312

## DOSIMETERS

- Dosimeter for high levels of absorbed radiation Patent  
[NASA-CASE-XLA-03645] c 14 N71-20430  
Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N81-12388

## DRAG CHUTES

- Flexible wing deployment device Patent  
[NASA-CASE-XLA-01220] c 02 N70-41863  
Lightweight, variable solidity knitted parachute fabric — for aerodynamic decelerators  
[NASA-CASE-LAR-10776-1] c 02 N74-10034

## DRAG MEASUREMENT

- Air frame drag balance Patent  
[NASA-CASE-XLA-00113] c 14 N70-33386  
Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-00755] c 01 N71-13410  
Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-05828] c 01 N71-13411  
Impact energy absorber Patent  
[NASA-CASE-XLA-01530] c 14 N71-23092  
System for use in conducting wake investigation for a wing in flight — differential pressure measurements for drag investigations  
[NASA-CASE-FRC-11024-1] c 02 N80-28300  
Skin friction measuring device for aircraft  
[NASA-CASE-FRC-11029-1] c 06 N81-17057

## DRAG REDUCTION

- Propeller blade loading control Patent  
[NASA-CASE-XAC-00139] c 02 N70-34856  
Aircraft wheel spray drag alleviator Patent  
[NASA-CASE-XLA-01583] c 02 N70-36825  
Improved method for driving two-phase turbines with enhanced efficiency  
[NASA-CASE-NPO-15037-1] c 37 N80-26660  
Leading edge vortex flaps for drag reduction — during subsonic flight  
[NASA-CASE-LAR-12750-1] c 02 N81-19016  
Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288

## DRIFT (INSTRUMENTATION)

- Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986  
Radiation direction detector including means for compensating for photocell aging Patent  
[NASA-CASE-XLA-00183] c 14 N70-40239  
Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175

## DRILL BITS

- Sample collecting impact bit Patent  
[NASA-CASE-XNP-01412] c 15 N70-42034  
Hole cutter — drill bits and rotating shaft  
[NASA-CASE-MFS-22649-1] c 37 N75-25186

## DRILLING

- Method for milling and drilling glass  
[NASA-CASE-GSC-12636-1] c 37 N80-29705

## DRILLS

- Rock drill for recovering samples  
[NASA-CASE-XNP-07478] c 14 N69-21923  
Soil penetrometer  
[NASA-CASE-XNP-05530] c 14 N73-32321

## DRIVES

- Transistor drive regulator Patent  
[NASA-CASE-LEW-10233] c 10 N71-27126

## DROP TOWERS

- Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

## DROPS (LIQUIDS)

- Droplet monitoring probe  
[NASA-CASE-NPO-10985] c 14 N73-20478

## DRUGS

- Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c 25 N75-12086

## DRYING

- Drying apparatus for photographic sheet material  
[NASA-CASE-GSC-11074-1] c 14 N73-28489  
Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484

## DRYING APPARATUS

- Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080

## DUCTED FANS

- Cam-operated pitch-change apparatus  
[NASA-CASE-LEW-13050-1] c 07 N79-14095

## DUCTILITY

- Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540

## DUCTS

- Duct coupling for single-handed operation Patent  
[NASA-CASE-MFS-20395] c 15 N71-24903  
Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MFS-19194-1] c 37 N76-14460  
Apparatus for supplying conditioned air at a substantially constant temperature and humidity  
[NASA-CASE-GSC-12191-1] c 31 N80-32583

## DURABILITY

- Belt for transmitting power from a cogged driving member to a cogged driven member  
[NASA-CASE-GSC-12289-1] c 37 N80-32717

## DUST COLLECTORS

- Disk pack cleaning table Patent Application  
[NASA-CASE-LAR-10590-1] c 15 N70-26819

## DYE LASERS

- Infrared tunable laser  
[NASA-CASE-ARC-10463-1] c 09 N73-32111  
Laser head for simultaneous optical pumping of several dye lasers — with single flash lamp  
[NASA-CASE-LAR-11341-1] c 36 N75-19655

## DYES

- Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170  
Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432

## DYNAMIC CHARACTERISTICS

- Dynamic sensor Patent  
[NASA-CASE-XAC-02877] c 14 N70-41681  
Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397  
Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N81-22358

## DYNAMIC CONTROL

- Motion restraining device  
[NASA-CASE-NPO-13619-1] c 37 N78-16369  
Systems for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N82-11861

## DYNAMIC LOADS

- Multilegged support system Patent  
[NASA-CASE-XLA-01326] c 11 N71-21481  
Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878  
Impact monitoring apparatus  
[NASA-CASE-MSC-15626-1] c 14 N72-25411

## DYNAMIC MODULUS OF ELASTICITY

- Apparatus for positioning and loading a test specimen Patent  
[NASA-CASE-XLE-01300] c 15 N70-41993

## DYNAMIC RESPONSE

- Impact simulator Patent  
[NASA-CASE-XLA-00493] c 11 N70-34786

Instrument for measuring the dynamic behavior of liquids

- Patent  
[NASA-CASE-XLA-05541] c 12 N71-26387  
Response analyzers for sensors Patent  
[NASA-CASE-MFS-11204] c 14 N71-29134  
Cam-operated pitch-change apparatus  
[NASA-CASE-LEW-13050-1] c 07 N79-14095

## DYNAMIC STRUCTURAL ANALYSIS

- Method and apparatus for measuring the damping characteristics of a structure  
[NASA-CASE-ARC-10154-1] c 14 N72-22440

## DYNAMIC TESTS

- Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c 11 N70-41677  
Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604

## DYNAMOMETERS

- Thrust dynamometer Patent  
[NASA-CASE-XLE-00702] c 14 N70-40203  
Thrust dynamometer Patent  
[NASA-CASE-XLE-05260] c 14 N71-20429

## E

## EAR

- Method and apparatus for continuously monitoring blood oxygenation, blood pressure, pulse rate and the pressure pulse curve utilizing an ear oximeter as transducer Patent  
[NASA-CASE-XAC-05422] c 04 N71-23185

## EARTH ATMOSPHERE

- Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991

## EARTH CRUST

- Seismic vibration source  
[NASA-CASE-NPO-14112-1] c 46 N79-22679

## EARTH ORBITS

- High temperature furnace for melting materials in space  
[NASA-CASE-MFS-20710] c 11 N72-23215  
A method of delivering a vehicle to earth orbit and returning the reusable portion thereof to earth  
[NASA-CASE-MSC-12391] c 30 N73-12884

## ECCENTRICS

- Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370

## ECHELETTE GRATINGS

- Cooled echelle grating spectrometer — for space telescope applications  
[NASA-CASE-NPO-14372-1] c 35 N80-26635

## ECHOES

- Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580  
Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376

## EDGES

- Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149

## EFFICIENCY

- Recovery of radiation damaged solar cells through thermal annealing  
[NASA-CASE-XGS-04047-2] c 03 N72-11062  
High efficiency multifrequency feed  
[NASA-CASE-GSC-11909] c 32 N74-20863

## EFFLUENTS

- Vortex generator for controlling the dispersion of effluents in a flowing liquid  
[NASA-CASE-LAR-12045-1] c 34 N77-24423  
Fluid sample collection and distribution system — qualitative analysis of aqueous samples from several points  
[NASA-CASE-MSC-16841-1] c 34 N79-24285

## EGRESS

- Explosively activated egress area  
[NASA-CASE-LAR-12624-1] c 03 N81-29107

## EJECTION

- Apparatus for ejection of an instrument cover  
[NASA-CASE-XMF-04132] c 15 N69-27502

## EJECTION SEATS

- Device for separating occupant from an ejection seat Patent  
[NASA-CASE-XMS-04625] c 05 N71-20718

## EJECTORS

- Ejection unit Patent  
[NASA-CASE-XNP-00676] c 15 N70-38996  
Device for separating occupant from an ejection seat Patent  
[NASA-CASE-XMS-04625] c 05 N71-20718  
Latch/ejector unit Patent  
[NASA-CASE-XLA-03538] c 15 N71-24897  
Diffuser/ejector system for a very high vacuum environment  
[NASA-CASE-MFS-15791-1] c 37 N82-33712



## ELASTIC BODIES

- Belleville spring assembly with elastic guides  
[NASA-CASE-XNP-09452] c 15 N69-27504
- Means for suppressing or attenuating bending motion of elastic bodies Patent  
[NASA-CASE-XAC-05632] c 32 N71-23971
- Device for measuring tensile forces  
[NASA-CASE-MFS-21728-1] c 35 N74-27865

## ELASTIC DEFORMATION

- Instrument for measuring torsional creep and recovery Patent  
[NASA-CASE-XLE-01481] c 14 N71-10781
- Means for suppressing or attenuating bending motion of elastic bodies Patent  
[NASA-CASE-XAC-05632] c 32 N71-23971

## ELASTIC MEDIA

- Miniature vibration isolator Patent  
[NASA-CASE-XLA-01019] c 15 N70-40156

## ELASTIC PROPERTIES

- Elastic universal joint Patent  
[NASA-CASE-XNP-00416] c 15 N70-36947
- Deformable vehicle wheel Patent  
[NASA-CASE-MFS-20400] c 31 N71-18611
- Threadless fastener apparatus Patent  
[NASA-CASE-XFR-05302] c 15 N71-23254
- Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076
- Meter for use in detecting tension in straps having predetermined elastic characteristics  
[NASA-CASE-MFS-22189-1] c 35 N75-19615

## ELASTIC SHEETS

- Method for forming plastic materials Patent  
[NASA-CASE-XMS-05516] c 15 N71-17803

## ELASTOMERS

- Metal valve pintle with encapsulated elastomeric body Patent  
[NASA-CASE-MSC-12116-1] c 15 N71-17648
- Extensometer Patent  
[NASA-CASE-XMF-04680] c 15 N71-19489
- Elastomeric silazane polymers and process for preparing the same Patent  
[NASA-CASE-XMF-04133] c 06 N71-20717
- Bonded elastomeric seal for electrochemical cells Patent  
[NASA-CASE-XGS-02631] c 03 N71-23006
- Conductive elastomeric extensometer  
[NASA-CASE-MFS-21049-1] c 52 N74-27864
- Vacuum pressure molding technique  
[NASA-CASE-LAR-10073-1] c 37 N76-24575
- Method of making hollow elastomeric bodies  
[NASA-CASE-NPO-13535-1] c 37 N76-31524
- Process for spinning flame retardant elastomeric compositions — fabricating synthetic fibers for high oxygen environments  
[NASA-CASE-MSC-14331-3] c 27 N78-32262
- Curable liquid hydrocarbon prepolymers containing hydroxyl groups and process for producing same  
[NASA-CASE-NPO-13137-1] c 27 N80-32514
- Prepolymer dianhydrides  
[NASA-CASE-NPO-13899-1] c 27 N80-32515
- Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104
- Process for the preparation of fluorine containing crosslinked elastomeric polytriazine and product so produced  
[NASA-CASE-ARC-11248-1] c 27 N81-17259
- The 1,2,4-oxadiazole elastomers — heat resistant polymers  
[NASA-CASE-ARC-11253-1] c 27 N81-17262
- Bifunctional monomers having terminal oxime and cyano or amidine groups  
[NASA-CASE-ARC-11253-3] c 27 N81-24256
- Circumferential shaft seal  
[NASA-CASE-LEW-12119-2] c 37 N81-26447
- Heat sealable, flame and abrasion resistant coated fabric — clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238
- Preparation of crosslinked 1,2,4-oxadiazole polymer  
[NASA-CASE-ARC-11253-2] c 27 N82-24338
- Method of bonding plasticized elastomer to metal and articles produced thereby  
[NASA-CASE-MFS-25181-1] c 27 N82-24340
- Elastomer toughened polyimide adhesives  
[NASA-CASE-LAR-12775-1] c 27 N82-25384
- Improved process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N82-26462
- ELECTRIC ARCS**
- Electric-arc heater Patent  
[NASA-CASE-XLA-00330] c 33 N70-34540
- Electric arc welding Patent  
[NASA-CASE-XMF-00392] c 15 N70-34814
- Electric arc driven wind tunnel Patent  
[NASA-CASE-XMF-00411] c 11 N70-36913
- Electric arc device for heating gases Patent  
[NASA-CASE-XAC-00319] c 25 N70-41628
- Electric arc apparatus Patent  
[NASA-CASE-XAC-01677] c 09 N71-20816
- Arc electrode of graphite with ball tip Patent  
[NASA-CASE-XLE-04788] c 09 N71-22987
- High powered arc electrodes — producing solar simulator radiation  
[NASA-CASE-LEW-11162-1] c 33 N74-12913
- Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c 33 N75-29318

## ELECTRIC BATTERIES

- Spacecraft battery seals  
[NASA-CASE-XGS-03864] c 15 N69-24320
- Sealed battery gas manifold construction Patent  
[NASA-CASE-XNP-03378] c 03 N71-11051
- Method and apparatus for battery charge control Patent  
[NASA-CASE-XGS-05432] c 03 N71-19438
- Coulometer and third electrode battery charging circuit Patent  
[NASA-CASE-GSC-10487-1] c 03 N71-24719
- Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579
- Synchronous orbit battery cyclers  
[NASA-CASE-GSC-11211-1] c 03 N72-25020
- Storage battery comprising negative plates of a wedge shaped configuration — for preventing shape change induced malfunctions  
[NASA-CASE-NPO-11806-1] c 44 N74-19693
- Battery testing device — for testing cells of multiple-cell battery  
[NASA-CASE-MFS-20761-1] c 44 N74-27519
- Rapid activation and checkout device for batteries  
[NASA-CASE-MFS-22749-1] c 44 N76-14601
- Zinc-halide battery with molten electrolyte  
[NASA-CASE-NPO-11961-1] c 44 N76-18643
- Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27664
- Voltage regulator for battery power source — using a bipolar transistor  
[NASA-CASE-FRC-10116-1] c 33 N79-23345
- In-situ cross linking of polyvinyl alcohol — application to battery separator films  
[NASA-CASE-LEW-13135-2] c 27 N81-24257
- State-of-charge coulometer  
[NASA-CASE-NPO-15759-1] c 35 N82-26630
- ELECTRIC BRIDGES**
- Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200
- Infinite range electronics gain control circuit  
[NASA-CASE-GSC-10786-1] c 10 N72-28241
- Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-2] c 33 N75-25041
- Germanium coated microbridge and method  
[NASA-CASE-MFS-23274-1] c 33 N78-13320
- Power converter  
[NASA-CASE-FRC-11014-1] c 33 N82-18494

## ELECTRIC CELLS

- Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c 03 N69-21539
- Heat activated cell with alkali anode and alkali salt electrolyte Patent  
[NASA-CASE-LEW-11358] c 03 N71-26084
- Ion-exchange membrane with platinum electrode assembly Patent  
[NASA-CASE-XMS-02063] c 03 N71-29044

## ELECTRIC CHARGE

- Method and device for determining battery state of charge Patent  
[NASA-CASE-NPO-10194] c 03 N71-20407
- Automatic battery charger Patent  
[NASA-CASE-XNP-04758] c 03 N71-24605
- State-of-charge coulometer  
[NASA-CASE-NPO-15759-1] c 35 N82-26630

## ELECTRIC CHOPPERS

- Monostable multivibrator  
[NASA-CASE-GSC-10082-1] c 10 N72-20221
- Transformer regulated self-stabilizing chopper  
[NASA-CASE-XGS-09186] c 33 N78-17295

## ELECTRIC COILS

- Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462
- A brushless dc tachometer  
[NASA-CASE-NPO-15706-1] c 35 N82-26633

## ELECTRIC CONDUCTORS

- Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c 09 N69-21542
- Solar cell matrix Patent  
[NASA-CASE-NPO-10821] c 03 N71-19545
- Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610

- Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618
- Electrical insulating layer process  
[NASA-CASE-LEW-10489-1] c 15 N72-25447
- Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c 15 N73-27406
- Solar cell grid patterns  
[NASA-CASE-NPO-13087-2] c 44 N76-31666
- Velocity measurement system  
[NASA-CASE-MFS-23363-1] c 35 N78-32396
- Shielded conductor cable system  
[NASA-CASE-MSC-12745-1] c 33 N81-27397

## ELECTRIC CONNECTORS

- Connector - Electrical  
[NASA-CASE-XLA-01288] c 09 N69-21470
- Test fixture for pellet-like electrical elements  
[NASA-CASE-XNP-06032] c 09 N69-21926
- Coupling device  
[NASA-CASE-XMS-07846-1] c 09 N69-21927
- Electrical feed-through connection for printed circuit boards and printed cable  
[NASA-CASE-XMF-01483] c 14 N69-27431
- Electrical connector pin with wiping action  
[NASA-CASE-XMF-04238] c 09 N69-39734
- Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c 09 N70-20737
- Electrical connector for flat cables Patent  
[NASA-CASE-XMF-00324] c 09 N70-34596
- Printed cable connector Patent  
[NASA-CASE-XMF-00369] c 09 N70-36494
- Printed circuit board with bellows rivet connection Patent  
[NASA-CASE-XNP-05082] c 15 N70-41960
- Method of making a molded connector Patent  
[NASA-CASE-XMF-03498] c 15 N71-15986
- Coaxial cable connector Patent  
[NASA-CASE-XNP-04732] c 09 N71-20851
- Connector internal force gauge Patent  
[NASA-CASE-XNP-03918] c 14 N71-23087
- Protection of serially connected solar cells against open circuits by the use of shunting diode Patent  
[NASA-CASE-XLE-04535] c 03 N71-23354
- Microelectronic module package Patent  
[NASA-CASE-XMS-02182] c 10 N71-28783
- Breakaway connector  
[NASA-CASE-NPO-11140] c 15 N72-17455
- Electrical connector  
[NASA-CASE-NPO-10694] c 09 N72-20200
- Radio frequency filter device  
[NASA-CASE-XLA-02609] c 09 N72-25256
- Use of unilluminated solar cells as shunt diodes for a solar array  
[NASA-CASE-GSC-10344-1] c 03 N72-27053
- Electrical connector  
[NASA-CASE-MFS-20757] c 09 N72-28225
- Device for configuring multiple leads — method for connecting electric leads to printed circuit board  
[NASA-CASE-MFS-22133-1] c 33 N74-26977
- Connector — for connecting circuits on different layers of multilayer printed circuit boards  
[NASA-CASE-LAR-11709-1] c 37 N76-27567
- Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738
- Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772
- Electrical self-aligning connector  
[NASA-CASE-MFS-25211-1] c 33 N80-32651
- Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359

## ELECTRIC CONTACTS

- Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500
- Deflective rod switch with elastic support and sealing means Patent  
[NASA-CASE-XNP-09808] c 09 N71-12518
- Method of making electrical contact on silicon solar cell and resultant product Patent  
[NASA-CASE-XLE-04787] c 03 N71-20492
- Continuous turning slip ring assembly Patent  
[NASA-CASE-XMF-01049] c 15 N71-23049
- Electrical connector  
[NASA-CASE-MFS-20757] c 09 N72-28225
- Electrostatic measurement system — for contact-electrolyzing a dielectric  
[NASA-CASE-MFS-22129-1] c 33 N75-18477
- Process for preparing liquid metal electrical contact device  
[NASA-CASE-LEW-11978-1] c 33 N77-26385
- Non-contacting power transfer device  
[NASA-CASE-GSC-12595-1] c 33 N82-24422

## ELECTRIC CONTROL

- Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316



- Energy saving electrical motor control system  
[NASA-CASE-MFS-25560-1] c 33 N82-30472
- ELECTRIC CURRENT**
- Didymium hydrate additive to nickel hydroxide electrodes Patent  
[NASA-CASE-XGS-03505] c 03 N71-10608
- Electrical load protection device Patent  
[NASA-CASE-MSC-12135-1] c 09 N71-12526
- Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent  
[NASA-CASE-XNP-00384] c 09 N71-13530
- Connector internal force gauge Patent  
[NASA-CASE-XNP-03918] c 14 N71-23087
- Pulse modulator providing fast rise and fall times Patent  
[NASA-CASE-XMS-04919] c 09 N71-23270
- Polarity sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271
- Protection of serially connected solar cells against open circuits by the use of shunting diode Patent  
[NASA-CASE-XLE-04535] c 03 N71-23354
- Color television systems using a single gun color cathode ray tube Patent  
[NASA-CASE-ERC-10098] c 09 N71-28618
- Current dependent filter inductance  
[NASA-CASE-ERC-10139] c 09 N72-17154
- High voltage transistor amplifier with constant current load  
[NASA-CASE-NPO-11023] c 09 N72-17155
- Current steering commutator  
[NASA-CASE-NPO-10743] c 08 N72-21199
- Saturation current protection apparatus for saturable core transformers  
[NASA-CASE-ERC-10075-2] c 09 N72-22196
- Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
[NASA-CASE-NPO-11388] c 03 N72-23048
- Load current sensor for a series pulse width modulated power supply  
[NASA-CASE-GSC-10656-1] c 09 N72-25249
- Method and apparatus for limiting field emission current  
[NASA-CASE-ERC-10015-2] c 10 N72-27246
- Deposition apparatus  
[NASA-CASE-LAR-10541-1] c 15 N72-32487
- Lightning current measuring systems  
[NASA-CASE-KSC-10807-1] c 33 N75-26246
- Overload protection system for power inverter  
[NASA-CASE-NPO-13872-1] c 33 N78-10377
- Shunt regulation electric power system  
[NASA-CASE-GSC-10135] c 33 N78-17286
- Lightning current waveform measuring system  
[NASA-CASE-KSC-11018-1] c 33 N79-10337
- Electroexplosive device  
[NASA-CASE-NPO-13858-1] c 28 N79-11231
- Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315
- Lightning current detector  
[NASA-CASE-KSC-11057-1] c 33 N79-14305
- Driver for solar cell I-V characteristic plots  
[NASA-CASE-NPO-14096-1] c 44 N80-18551
- Electrical power generating system — for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280
- ELECTRIC DISCHARGES**
- Electrical discharge apparatus for forming Patent  
[NASA-CASE-XMF-00375] c 15 N70-34249
- High voltage pulse generator Patent  
[NASA-CASE-MSC-12178-1] c 09 N71-13518
- Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
[NASA-CASE-XNP-00745] c 10 N71-28960
- Rapidly pulsed, high intensity, incoherent light source  
[NASA-CASE-XLE-2529-3] c 33 N74-20859
- Voltage feed through apparatus having reduced partial discharge  
[NASA-CASE-GSC-12347-1] c 33 N80-18286
- ELECTRIC ENERGY STORAGE**
- Apparatus for measuring current flow Patent  
[NASA-CASE-XGS-02439] c 14 N71-19431
- Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27664
- Electrically rechargeable REDOX flow cell  
[NASA-CASE-LEW-12220-1] c 44 N77-14581
- Gels as battery separators for soluble electrode cells  
[NASA-CASE-LEW-12364-1] c 44 N77-22606
- Electrochemical cell for rebalancing REDOX flow system  
[NASA-CASE-LEW-13150-1] c 44 N79-26474
- Toroidal cell and battery — storage battery for high amp-hour load applications  
[NASA-CASE-LEW-12918-1] c 44 N81-24521

## ELECTRIC EQUIPMENT

- Ac power amplifier Patent Application  
[NASA-CASE-LAR-10218-1] c 09 N70-34559
- Generator for a space power system Patent  
[NASA-CASE-XLE-04250] c 09 N71-20446
- High impedance measuring apparatus Patent  
[NASA-CASE-XMS-08589-1] c 09 N71-20569
- Regulated power supply Patent  
[NASA-CASE-XMS-01991] c 09 N71-21449
- Method for improving the signal-to-noise ratio of the Wheatstone bridge type bolometer Patent  
[NASA-CASE-XLA-02810] c 14 N71-25901
- Buck boost voltage regulation circuit Patent  
[NASA-CASE-GSC-10735-1] c 10 N71-26085
- Electronically resettable fuse Patent  
[NASA-CASE-XGS-11177] c 09 N71-27001
- Voltage regulator Patent  
[NASA-CASE-ERC-10113] c 09 N71-27053
- Digital pulse width selection circuit Patent  
[NASA-CASE-XLA-07788] c 09 N71-29139
- Solar energy powered heliostrop  
[NASA-CASE-GSC-10945-1] c 21 N72-31637
- Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10467-1] c 09 N73-14214
- Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c 15 N73-14469
- Overvoltage protection network  
[NASA-CASE-ARC-10197-1] c 33 N74-17929
- Sprag solenoid brake — development and operations of electrically controlled brake  
[NASA-CASE-MFS-21846-1] c 37 N74-26976
- Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c 37 N75-18573
- Self-regulating proportionally controlled heating apparatus and technique  
[NASA-CASE-GSC-11752-1] c 77 N75-20140
- ELECTRIC EQUIPMENT TESTS**
- Test fixture for pellet-like electrical elements  
[NASA-CASE-XNP-06032] c 09 N69-21926
- Pulse amplitude and width detector Patent  
[NASA-CASE-XMF-06519] c 09 N71-12519
- High power-high voltage waterload Patent  
[NASA-CASE-XNP-05381] c 09 N71-20842
- ELECTRIC FIELD STRENGTH**
- Apparatus for field strength measurement of a space vehicle Patent  
[NASA-CASE-XLE-00820] c 14 N71-16014
- Apparatus for measuring electric field strength on the surface of a model vehicle Patent  
[NASA-CASE-XLE-02038] c 09 N71-16086
- Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790
- Apparatus for determining the deflection of an electron beam impinging on a target Patent  
[NASA-CASE-XMF-06617] c 09 N71-24843
- ELECTRIC FIELDS**
- Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-00755] c 01 N71-13410
- Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-05828] c 01 N71-13411
- Instrument for measuring potentials on two dimensional electric field plots Patent  
[NASA-CASE-XLA-08493] c 10 N71-19421
- Electron beam instrument for measuring electric fields Patent  
[NASA-CASE-XMF-10289] c 14 N71-23699
- Field ionization electrodes Patent  
[NASA-CASE-ERC-10013] c 09 N71-26678
- Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175
- Rocket borne instrument to measure electric fields inside electrified clouds  
[NASA-CASE-KSC-10730-1] c 14 N73-32318
- Electric field measuring and display system — for cloud formations  
[NASA-CASE-KSC-10731-1] c 33 N74-27862
- Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779
- ELECTRIC FILTERS**
- Static inverters which sum a plurality of waves Patent  
[NASA-CASE-XMF-00663] c 08 N71-18752
- Remodulator filter Patent  
[NASA-CASE-NPO-10198] c 09 N71-24806
- RC networks and amplifiers employing the same  
[NASA-CASE-XAC-05462-2] c 10 N72-17171
- Multiloop RC active filter apparatus having low parameter sensitivity with low amplifier gain  
[NASA-CASE-ARC-10192] c 09 N72-21245
- Radio frequency filter device  
[NASA-CASE-XLA-02609] c 09 N72-25256
- Filter for third order phase locked loops  
[NASA-CASE-NPO-11941-1] c 10 N73-27171

## ELECTRIC FUSES

- Electrical load protection device Patent  
[NASA-CASE-MSC-12135-1] c 09 N71-12526
- Diode and protection fuse unit Patent  
[NASA-CASE-XKS-03381] c 09 N71-22796
- Fused switch  
[NASA-CASE-XMS-01244-1] c 33 N79-33393
- ELECTRIC GENERATORS**
- Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c 03 N69-21330
- Generator for a space power system Patent  
[NASA-CASE-XLE-04250] c 09 N71-20446
- Solid state pulse generator with constant output width, for variable input width, in nanosecond range Patent  
[NASA-CASE-XGS-03427] c 10 N71-23029
- Continuous turning slip ring assembly Patent  
[NASA-CASE-XMF-01049] c 15 N71-23049
- Positive dc to positive dc converter Patent  
[NASA-CASE-XMF-14301] c 09 N71-23188
- High temperature ferromagnetic cobalt-base alloy Patent  
[NASA-CASE-XLE-03629] c 17 N71-23248
- Variable width pulse integrator Patent  
[NASA-CASE-XLA-03356] c 10 N71-23315
- Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114-2] c 09 N71-24807
- RC rate generator for slow speed measurement Patent  
[NASA-CASE-XMF-02966] c 10 N71-24863
- Pulse width inverter Patent  
[NASA-CASE-MFS-10068] c 10 N71-25139
- Multiple varactor frequency doubler Patent  
[NASA-CASE-XMF-04958-1] c 10 N71-26414
- Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366
- Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114] c 33 N71-27862
- Load-insensitive electrical device  
[NASA-CASE-XER-11046] c 09 N72-22203
- Controllable load insensitive power converters  
[NASA-CASE-ERC-10268] c 09 N72-25252
- A dc to ac to dc converter having transistor synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c 09 N72-25253
- Electromagnetic wave energy converter  
[NASA-CASE-GSC-11394-1] c 09 N73-32109
- Heat operated cryogenic electrical generator  
[NASA-CASE-NPO-13303-1] c 20 N75-24837
- Electric power generation system directory from laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524
- Smoke generator  
[NASA-CASE-ARC-10905-1] c 37 N77-13418
- Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-11389-1] c 33 N77-26387
- Wind wheel electric power generator  
[NASA-CASE-MFS-23515-1] c 44 N80-21828
- Natural turbulence electrical power generator — using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834
- Electrical power generating system — for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280
- Linear magnetic motor/generator — to generate electric energy using magnetic flux for spacecraft power supply  
[NASA-CASE-GSC-12518-1] c 33 N82-24421
- ELECTRIC IGNITION**
- Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779
- ELECTRIC MOTOR VEHICLES**
- Automotive absorption air conditioner utilizing solar and motor waste heat  
[NASA-CASE-NPO-15183-1] c 44 N82-26776
- ELECTRIC MOTORS**
- Bus voltage compensation circuit for controlling direct current motor  
[NASA-CASE-XMS-04215-1] c 09 N69-39987
- Electronic motor control system Patent  
[NASA-CASE-XMF-01129] c 09 N70-38712
- Electronic beam switching commutator Patent  
[NASA-CASE-XGS-01451] c 09 N71-10677
- Regenerative braking system Patent  
[NASA-CASE-XMF-01096] c 10 N71-16030
- Angular position and velocity sensing apparatus Patent  
[NASA-CASE-XGS-05680] c 14 N71-17585
- Reversible current control apparatus Patent  
[NASA-CASE-XLA-09371] c 10 N71-18724
- Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c 10 N71-18772
- Detenting servomotor Patent  
[NASA-CASE-XNP-06936] c 15 N71-24695



Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMF-05195] c 10 N71-24861

Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895

Direct current motor with stationary armature and field Patent  
[NASA-CASE-XGS-05290] c 09 N71-25999

Dual polarity full wave dc motor drive Patent  
[NASA-CASE-XNP-07477] c 09 N71-26092

Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418

A dc motor speed control system Patent  
[NASA-CASE-MFS-14610] c 09 N71-28886

Optimal control system for an electric motor driven vehicle  
[NASA-CASE-NPO-11210] c 11 N72-20244

Electric motive machine including magnetic bearing  
[NASA-CASE-XGS-07805] c 15 N72-33476

Redundant speed control for brushless Hall effect motor  
[NASA-CASE-MFS-20207-1] c 09 N73-32107

Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c 33 N77-26386

Rotary electric device  
[NASA-CASE-GSC-12138-1] c 33 N79-20314

Controller for computer control of brushless dc motors — automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352

A simplified power factor controller with increased energy saving circuit  
[NASA-CASE-MFS-25323-1] c 33 N82-12349

Linear magnetic motor/generator — to generate electric energy using magnetic flux for spacecraft power supply  
[NASA-CASE-GSC-12518-1] c 33 N82-24421

Energy saving electrical motor control system  
[NASA-CASE-MFS-25560-1] c 33 N82-30472

**ELECTRIC NETWORKS**

Condition and condition duration indicator Patent  
[NASA-CASE-XMF-01097] c 10 N71-16058

Solid state pulse generator with constant output width, for variable input width, in nanosecond range Patent  
[NASA-CASE-XGS-03427] c 10 N71-23029

Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316

Broadband frequency discriminator Patent  
[NASA-CASE-NPO-10096] c 07 N71-24583

Test apparatus for locating shorts during assembly of electrical buses  
[NASA-CASE-ARC-11116-1] c 33 N82-24420

**ELECTRIC POTENTIAL**

Method and apparatus for battery charge control Patent  
[NASA-CASE-XGS-05432] c 03 N71-19438

Positive dc to positive dc converter Patent  
[NASA-CASE-XMF-14301] c 09 N71-23188

Variable width pulse integrator Patent  
[NASA-CASE-XLA-03356] c 10 N71-23315

Voltage dropout sensor Patent  
[NASA-CASE-KSC-10020] c 10 N71-27338

Automated equipotential plotter  
[NASA-CASE-NPO-11134] c 09 N72-21246

Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200

Load-insensitive electrical device  
[NASA-CASE-XER-11046] c 09 N72-22203

Continuously variable voltage controlled phase shifter  
[NASA-CASE-NPO-11129] c 09 N72-33204

Photoelectron spectrometer with means for stabilizing sample surface potential  
[NASA-CASE-NPO-13772-1] c 35 N78-10429

Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411

Driver for solar cell I-V characteristic plots  
[NASA-CASE-NPO-14096-1] c 44 N80-18551

Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348

Method and apparatus for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N82-12739

Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 25 N82-26397

Method for determining the point of zero zeta potential of semiconductor materials  
[NASA-CASE-LAR-12893-1] c 33 N82-26573

**ELECTRIC POWER**

Switching circuit employing regeneratively connected complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032

High power-high voltage waterload Patent  
[NASA-CASE-XNP-05381] c 09 N71-20842

Power factor control system for AC induction motors  
[NASA-CASE-MFS-23280-1] c 33 N78-10376

Shunt regulation electric power system  
[NASA-CASE-GSC-10135] c 33 N78-17296

Electrical power generating system — for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280

**ELECTRIC POWER PLANTS**

Ocean thermal plant  
[NASA-CASE-KSC-11034-1] c 44 N78-32542

**ELECTRIC POWER SUPPLIES**

Current dependent filter inductance  
[NASA-CASE-ERC-10139] c 09 N72-17154

Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
[NASA-CASE-NPO-11388] c 03 N72-23048

Parasitic suppressing circuit  
[NASA-CASE-ERC-10403-1] c 10 N73-26228

Powerplexer  
[NASA-CASE-MSC-12396-1] c 03 N73-31988

Inherent redundancy electric heater  
[NASA-CASE-MFS-21462-1] c 33 N74-14935

Temperature compensated current source  
[NASA-CASE-MSC-11235] c 33 N78-17294

**ELECTRIC POWER TRANSMISSION**

Magnetic power switch Patent  
[NASA-CASE-NPO-10242] c 09 N71-24803

Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366

Powerplexer  
[NASA-CASE-MSC-12396-1] c 03 N73-31988

Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c 44 N74-19870

Electrical rotary joint apparatus for large space structures  
[NASA-CASE-MFS-23981-1] c 33 N81-19394

**ELECTRIC PROPULSION**

Electric propulsion engine test chamber Patent  
[NASA-CASE-XLE-00252] c 11 N70-34844

**ELECTRIC PULSES**

Pulse counting circuit which simultaneously indicates the occurrence of the nth pulse Patent  
[NASA-CASE-XMF-00906] c 09 N70-41655

Variable pulse width multiplier Patent  
[NASA-CASE-XLA-02850] c 09 N71-20447

Phonocardiograph transducer Patent  
[NASA-CASE-XMS-05365] c 14 N71-22993

Solid state pulse generator with constant output width, for variable input width, in nanosecond range Patent  
[NASA-CASE-XGS-03427] c 10 N71-23029

Variable width pulse integrator Patent  
[NASA-CASE-XLA-03356] c 10 N71-23315

Pulse rise time and amplitude detector Patent  
[NASA-CASE-XMF-08804] c 09 N71-24717

Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137

Precision rectifier with FET switching means Patent  
[NASA-CASE-ARC-10101-1] c 09 N71-33109

Phase modulating with odd and even finite power series of a modulating signal  
[NASA-CASE-LAR-11607-1] c 32 N77-14292

Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310

Pulsed thyristor trigger control circuit  
[NASA-CASE-MFS-25616-1] c 33 N82-24428

**ELECTRIC RELAYS**

Protective circuit of the spark gap type  
[NASA-CASE-XAC-08981] c 09 N69-39897

Time-division multiplexer Patent  
[NASA-CASE-XNP-00431] c 09 N70-38998

Out of tolerance warning alarm system for plurality of monitored circuits Patent  
[NASA-CASE-XMS-10984-1] c 10 N71-19417

Time division radio relay synchronizing system using different sync code words for in sync and out of sync conditions Patent  
[NASA-CASE-GSC-10373-1] c 07 N71-19773

Circuit breaker utilizing magnetic latching relays Patent  
[NASA-CASE-MSC-11277] c 09 N71-29008

Multi-cell battery protection system  
[NASA-CASE-LEW-12039-1] c 44 N78-14625

**ELECTRIC ROCKET ENGINES**

Electron bombardment ion engine Patent  
[NASA-CASE-XNP-04124] c 28 N71-21822

**ELECTRIC STIMULI**

Tread drum for animals — having an electrical shock station  
[NASA-CASE-ARC-10917-1] c 51 N78-27733

**ELECTRIC SWITCHES**

Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c 03 N71-12255

Deflective rod switch with elastic support and sealing means Patent  
[NASA-CASE-XNP-09808] c 09 N71-12518

Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610

Plural position switch status and operativeness checker Patent  
[NASA-CASE-XLA-08799] c 10 N71-27272

Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
[NASA-CASE-XNP-00745] c 10 N71-28960

Cyclic switch Patent  
[NASA-CASE-LEW-10155-1] c 09 N71-29035

Telemetry actuated switch  
[NASA-CASE-ARC-10105] c 09 N72-17153

Differential pressure control  
[NASA-CASE-MFS-14216] c 14 N73-13418

Fused switch  
[NASA-CASE-XMS-01244-1] c 33 N79-33393

Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418

**ELECTRIC TERMINALS**

Electrical connector pin with wiping action  
[NASA-CASE-XMF-04238] c 09 N69-39734

Electrical connector for flat cables Patent  
[NASA-CASE-XMF-00324] c 09 N70-34596

Tool attachment for spreading loose elements away from work Patent  
[NASA-CASE-XMF-02107] c 15 N71-10809

Electrical spot terminal assembly Patent  
[NASA-CASE-NPO-10034] c 15 N71-17685

Resistance soldering apparatus  
[NASA-CASE-GSC-10913] c 15 N72-22491

Radio frequency filter device  
[NASA-CASE-XLA-02609] c 09 N72-25256

Device for configuring multiple leads — method for connecting electric leads to printed circuit board  
[NASA-CASE-MFS-22133-1] c 33 N74-26977

**ELECTRIC WELDING**

Electric welding torch Patent  
[NASA-CASE-XMF-02330] c 15 N71-23798

Butt welder for fine gauge tungsten/rhenium thermocouple wire  
[NASA-CASE-LAR-10103-1] c 15 N73-14468

Welding blades to rotors  
[NASA-CASE-LEW-10533-1] c 15 N73-28515

**ELECTRIC WIRE**

Wire gnd forming apparatus Patent  
[NASA-CASE-XLE-00023] c 15 N70-33330

Weld control system using thermocouple wire Patent  
[NASA-CASE-MFS-06074] c 15 N71-20393

Ablation sensor Patent  
[NASA-CASE-XLA-01794] c 33 N71-21586

Resistance soldering apparatus  
[NASA-CASE-GSC-10913] c 15 N72-22491

Lead attachment to high temperature devices  
[NASA-CASE-ERC-10224] c 09 N72-25261

Means for accommodating large overstrain in lead wires — by storing extra length of wire in stretchable loop  
[NASA-CASE-LAR-10168-1] c 33 N74-22865

Device for configuring multiple leads — method for connecting electric leads to printed circuit board  
[NASA-CASE-MFS-22133-1] c 33 N74-26977

High current electrical lead — for thermionic converters  
[NASA-CASE-LEW-10950-1] c 33 N74-27683

Wire stripper  
[NASA-CASE-FRC-10111-1] c 37 N79-10419

Method and apparatus for preparing multiconductor cable with flat conductors  
[NASA-CASE-MFS-10946-1] c 31 N79-21226

Edge coating of flat wires  
[NASA-CASE-XMF-05757-1] c 31 N79-21227

Phase sensitive guidance sensor for wire-following vehicles  
[NASA-CASE-NPO-15341-1] c 33 N82-12346

Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 33 N82-24426

**ELECTRICAL ENGINEERING**

Relay binary circuit Patent  
[NASA-CASE-XMF-00421] c 09 N70-34502

Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c 09 N71-23021

**ELECTRICAL FAULTS**

Apparatus for overcurrent protection of a push-pull amplifier Patent  
[NASA-CASE-MSC-12033-1] c 09 N71-13531

Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366

Solar cell assembly test method  
[NASA-CASE-NPO-10401] c 03 N72-20033



Shared memory for a fault-tolerant computer  
[NASA-CASE-NPO-13139-1] c 60 N76-21914

**ELECTRICAL IMPEDANCE**  
High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c 09 N71-19516  
High impedance measuring apparatus Patent  
[NASA-CASE-XMS-08589-1] c 09 N71-20569  
Multialarm summary alarm Patent  
[NASA-CASE-XLE-03061-1] c 10 N71-24798  
Signal conditioning circuit apparatus — with constant input impedance  
[NASA-CASE-ARC-10348-1] c 33 N75-19518  
Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525  
Solid-state current transformer  
[NASA-CASE-MFS-22560-1] c 33 N77-14335

**ELECTRICAL INSULATION**  
Solenoid construction Patent  
[NASA-CASE-XNP-01951] c 09 N70-41929  
Method and apparatus for cryogenic wire stripping Patent  
[NASA-CASE-MFS-10340] c 15 N71-17628  
Plasma device feed system Patent  
[NASA-CASE-XLE-02902] c 25 N71-21694  
Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781  
Electrical insulating layer process  
[NASA-CASE-LEW-10489-1] c 15 N72-25447  
Bio-isolated dc operational amplifier — for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c 33 N74-21851  
Stored charge transistor  
[NASA-CASE-NPO-11156-2] c 33 N75-31331  
Method of making an insulation foil  
[NASA-CASE-LEW-11484-1] c 24 N75-33181  
Gas ion laser construction for electrically isolating the pressure gauge thereof  
[NASA-CASE-MFS-22597] c 36 N78-17366  
Wire stripper  
[NASA-CASE-FRC-10111-1] c 37 N79-10419

**ELECTRICAL MEASUREMENT**  
Device for determining the accuracy of the flare on a flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785  
Bootstrap unloader Patent  
[NASA-CASE-XNP-09768] c 09 N71-12516  
Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent  
[NASA-CASE-XNP-00384] c 09 N71-13530  
Apparatus for field strength measurement of a space vehicle Patent  
[NASA-CASE-XLE-00820] c 14 N71-16014  
Apparatus for measuring current flow Patent  
[NASA-CASE-XGS-02439] c 14 N71-19431  
High voltage divider system Patent  
[NASA-CASE-XLE-02008] c 09 N71-21583  
Ablation sensor Patent  
[NASA-CASE-XLA-01794] c 33 N71-21586  
Hall current measuring apparatus having a series resistor for temperature compensation Patent  
[NASA-CASE-XAC-01662] c 14 N71-23037  
Connector internal force gauge Patent  
[NASA-CASE-XNP-03918] c 14 N71-23087  
Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c 14 N71-26244  
Lightning current measuring systems  
[NASA-CASE-KSC-10807-1] c 33 N75-26246  
Rapid activation and checkout device for batteries  
[NASA-CASE-MFS-22749-1] c 44 N76-14601  
Electrical conductivity cell and method for fabricating the same  
[NASA-CASE-ARC-10810-1] c 33 N76-19339  
Tnelectrode capacitive pressure transducer  
[NASA-CASE-ARC-10711-2] c 33 N76-21390  
Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525  
Apparatus for measuring semiconductor device resistance  
[NASA-CASE-NPO-14424-1] c 33 N80-32650  
Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779  
Piezoelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659

**ELECTRICAL PROPERTIES**  
Drift compensation circuit for analog to digital converter Patent  
[NASA-CASE-XNP-04780] c 08 N71-19687  
Electronically resettable fuse Patent  
[NASA-CASE-XGS-11177] c 09 N71-27001  
Voltage regulator Patent  
[NASA-CASE-ERC-10113] c 09 N71-27053  
Radiometric temperature reference Patent  
[NASA-CASE-MSC-13276-1] c 14 N71-27058

Solar cell matrix  
[NASA-CASE-NPO-11190] c 03 N71-34044  
Storage battery comprising negative plates of a wedge shaped configuration — for preventing shape change induced malfunctions  
[NASA-CASE-NPO-11806-1] c 44 N74-19693  
Thermocouple tape — developed from thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c 35 N76-15434  
Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437

**ELECTRICAL RESISTANCE**  
Positive contact resistance soldering unit  
[NASA-CASE-KSC-10242] c 15 N72-23497  
RF-source resistance meters  
[NASA-CASE-NPO-11291-1] c 14 N73-30388  
Apparatus for measuring semiconductor device resistance  
[NASA-CASE-NPO-14424-1] c 33 N80-32650

**ELECTRICAL RESISTIVITY**  
GaAs solar detector using manganese as a doping agent Patent  
[NASA-CASE-XNP-01328] c 26 N71-18064  
Thermopile vacuum gage tube simulator Patent  
[NASA-CASE-XLA-02758] c 14 N71-18481  
Electrically conductive fluorocarbon polymer  
[NASA-CASE-XLE-06774-2] c 06 N72-25150  
Electrical conductivity cell and method for fabricating the same  
[NASA-CASE-ARC-10810-1] c 33 N76-19339  
Durable antistatic coating for polymethylmethacrylate  
[NASA-CASE-NPO-13867-1] c 27 N78-14164  
Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315  
Lightweight electrically-powered flexible thermal laminate — made of metal and nonconductive yarns  
[NASA-CASE-MSC-12662-1] c 33 N79-12331  
Electrically conductive thermal control coatings  
[NASA-CASE-GSC-12207-1] c 24 N79-14156  
Electrical self-aligning connector  
[NASA-CASE-MFS-25211-1] c 33 N80-32651  
Electrically conductive palladium containing polyimide films  
[NASA-CASE-LAR-12705-1] c 25 N82-26396  
Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709

**ELECTRICITY**  
Thermionic converter with current augmented by self induced magnetic field Patent  
[NASA-CASE-XLE-01903] c 22 N71-23599

**ELECTRO-OPTICS**  
Electro-optical scanning apparatus Patent Application  
[NASA-CASE-NPO-11106] c 14 N70-34697  
Electro-optical alignment control system Patent  
[NASA-CASE-XMF-00908] c 14 N70-40238  
Polarimeter for transient measurement Patent  
[NASA-CASE-XNP-08883] c 23 N71-16101  
Light direction sensor  
[NASA-CASE-NPO-11201] c 14 N72-27409  
Ultrastable calibrated light source  
[NASA-CASE-MSC-12293-1] c 14 N72-27411  
Optical conversion method — for spacecraft television  
[NASA-CASE-MSC-12618-1] c 74 N78-17865  
Noncontacting method for measuring angular deflection  
[NASA-CASE-LAR-12178-1] c 74 N80-21138

**ELECTROACOUSTIC TRANSDUCERS**  
Respiration monitor  
[NASA-CASE-FRC-10012] c 14 N72-17329  
Material suspension within an acoustically excited resonant chamber — at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774  
CDS solid state phase insensitive ultrasonic transducer — annealing cadmium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559

**ELECTROACOUSTIC WAVES**  
Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606

**ELECTROCARDIOGRAPHY**  
Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606  
Ratemeter  
[NASA-CASE-MFS-20418] c 14 N73-24473  
Insulated electrocardiographic electrodes — without paste electrolyte  
[NASA-CASE-MSC-14339-1] c 05 N75-24716  
Pocket ECG electrode  
[NASA-CASE-ARC-11258-1] c 52 N80-33081  
Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612

**ELECTROCATALYSTS**  
Electrocatalyst for oxygen reduction  
[NASA-CASE-HQN-10537-1] c 06 N72-10138

Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-1] c 33 N80-20487  
Zirconium carbide as an electrocatalyst for the chromous/chromic redox couple  
[NASA-CASE-LEW-13246-1] c 25 N81-26203

**ELECTROCHEMICAL CELLS**  
Apparatus for measuring swelling characteristics of membranes  
[NASA-CASE-XGS-03865] c 14 N69-21363  
Prevention of pressure build-up in electrochemical cells Patent  
[NASA-CASE-XGS-01419] c 03 N70-41864  
Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c 03 N71-11053  
Sealing device for an electrochemical cell Patent  
[NASA-CASE-XGS-02630] c 03 N71-22974  
Sealed electrochemical cell provided with a flexible casing Patent  
[NASA-CASE-XGS-01513] c 03 N71-23336  
Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c 03 N71-29129  
Frangible electrochemical cell  
[NASA-CASE-XGS-10010] c 03 N72-15988  
Porous electrode comprising a bonded stack of pieces of corrugated metal foil  
[NASA-CASE-GSC-11368-1] c 09 N73-32108  
Battery testing device — for testing cells of multiple-cell battery  
[NASA-CASE-MFS-20761-1] c 44 N74-27519  
Electrical conductivity cell and method for fabricating the same  
[NASA-CASE-ARC-10810-1] c 33 N76-19339  
Multi-cell battery protection system  
[NASA-CASE-LEW-12039-1] c 44 N78-14625  
Method and device for the detection of phenol and related compounds — in an electrochemical cell  
[NASA-CASE-LEW-12513-1] c 25 N79-22235  
Electrochemical cell for rebalancing REDOX flow system  
[NASA-CASE-LEW-13150-1] c 44 N79-26474  
Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-1] c 33 N80-20487  
Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645

**ELECTROCHEMICAL MACHINING**  
Apparatus for electrolytically tapered or contoured cavities  
[NASA-CASE-XNP-08835-1] c 37 N80-14395

**ELECTROCHEMICAL OXIDATION**  
Method and device for the detection of phenol and related compounds — in an electrochemical cell  
[NASA-CASE-LEW-12513-1] c 25 N79-22235

**ELECTROCHEMISTRY**  
Electrode for biological recording  
[NASA-CASE-XMS-02872] c 05 N69-21925  
Electrochemical detection device — for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073

**ELECTRODE FILM BARRIERS**  
Formulated plastic separators for soluble electrode cells — rubber-ion transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313

**ELECTRODEPOSITION**  
Method of electrolytically binding a layer of semiconductors together Patent  
[NASA-CASE-XNP-01959] c 26 N71-23043  
Method of producing crystalline materials  
[NASA-CASE-NPO-10440] c 15 N72-21466  
Electrophoretic sample insertion — device for uniformly distributing samples in flow path  
[NASA-CASE-MFS-21395-1] c 25 N74-26948  
Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c 37 N75-19684  
Method and device for the detection of phenol and related compounds — in an electrochemical cell  
[NASA-CASE-LEW-12513-1] c 25 N79-22235

**ELECTRODES**  
Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c 09 N69-21542  
Electrode for biological recording  
[NASA-CASE-XMS-02872] c 05 N69-21925  
Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786  
Ionization vacuum gauge Patent  
[NASA-CASE-XNP-00646] c 14 N70-35666  
Double optic system for ion engine Patent  
[NASA-CASE-XNP-02839] c 28 N70-41922  
Didymium hydrate additive to nickel hydroxide electrodes Patent  
[NASA-CASE-XGS-03505] c 03 N71-10608



Focussing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618

Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189

Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193

Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c 05 N71-12346

Method of making electrical contact on silicon solar cell and resultant product Patent  
[NASA-CASE-XLE-04787] c 03 N71-20492

Arc electrode of graphite with ball tip Patent  
[NASA-CASE-XLE-04788] c 09 N71-22987

Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022

Automatic recording McLeod gauge Patent  
[NASA-CASE-XLE-03280] c 14 N71-23093

Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618

Plated electrodes Patent  
[NASA-CASE-XMS-04213-1] c 09 N71-26002

Method and apparatus for attaching physiological monitoring electrodes Patent  
[NASA-CASE-XFR-07658-1] c 05 N71-26293

Field ionization electrodes Patent  
[NASA-CASE-ERC-10013] c 09 N71-26678

Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MS-C-90153-2] c 05 N72-25120

Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c 05 N72-25121

Compressible biomedical electrode  
[NASA-CASE-MS-C-13648] c 05 N72-27103

Method and apparatus for limiting field emission current  
[NASA-CASE-ERC-10015-2] c 10 N72-27246

Coaxial high density, hypervelocity plasma generator and accelerator with ionizable metal disc  
[NASA-CASE-MFS-20589] c 25 N72-32688

Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783

Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c 09 N73-27150

Porus electrode comprising a bonded stack of pieces of corrugated metal foil  
[NASA-CASE-GSC-11368-1] c 09 N73-32108

High powered arc electrodes --- producing solar simulator radiation  
[NASA-CASE-LEW-11162-1] c 33 N74-12913

Method of making porous conductive supports for electrodes --- by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692

Insulated electrocardiographic electrodes --- without paste electrolyte  
[NASA-CASE-MS-C-14339-1] c 05 N75-24716

Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525

Gels as battery separators for soluble electrode cells  
[NASA-CASE-LEW-12364-1] c 44 N77-22606

Snap-in compressible biomedical electrode  
[NASA-CASE-MS-C-14623-1] c 52 N77-28717

Cesium thermionic converters having improved electrodes  
[NASA-CASE-LEW-12038-3] c 44 N78-25555

Apparatus for electrolytically tapered or contoured cavities  
[NASA-CASE-XNP-08835-1] c 37 N80-14395

Toroidal cell and battery --- storage battery for high amp-hour load applications  
[NASA-CASE-LEW-12918-1] c 44 N81-24521

Additive for zinc electrodes  
[NASA-CASE-LEW-13286-1] c 44 N81-27597

Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524

Microwave field effect transistor  
[NASA-CASE-GSC-12442-1] c 33 N82-20398

Method of making formulated plastic separators for soluble electrode cells  
[NASA-CASE-LEW-12358-2] c 25 N82-21268

Improved chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N82-22672

Light weight nickel battery plaque  
[NASA-CASE-LEW-13349-1] c 44 N82-22673

Multistage depressed collector for dual mode operation --- for microwave transmitting tubes  
[NASA-CASE-LEW-13282-1] c 33 N82-24415

Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645

Ion beam textured graphite electrode plates --- high efficiency electron tube devices  
[NASA-CASE-LEW-12919-2] c 24 N82-26386

Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N82-26575

Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N82-26629

**ELECTRODIALYSIS**  
Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370

**ELECTROFORMING**  
Method of electroforming a rocket chamber  
[NASA-CASE-LEW-11118-1] c 20 N74-32919

**ELECTROHYDRAULIC FORMING**  
Electrical discharge apparatus for forming Patent  
[NASA-CASE-XMF-00375] c 15 N70-34249

**ELECTROHYDRODYNAMICS**  
Electrohydrodynamic control valve Patent  
[NASA-CASE-NPO-10416] c 12 N71-27332

**ELECTROKINETICS**  
Zeta potential flowmeter Patent  
[NASA-CASE-XNP-06509] c 14 N71-23226

**ELECTROLYSIS**  
Passively regulated water electrolysis rocket engine Patent  
[NASA-CASE-XGS-08729] c 28 N71-14044

Combined electrolysis device and fuel cell and method of operation Patent  
[NASA-CASE-XLE-01645] c 03 N71-20904

Polymenc electrolytic hygrometer  
[NASA-CASE-NPO-13948-1] c 35 N78-25391

**ELECTROLYTES**  
Apparatus for measuring swelling characteristics of membranes  
[NASA-CASE-XGS-03865] c 14 N69-21363

Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c 03 N71-11052

Sealed electrochemical cell provided with a flexible casing Patent  
[NASA-CASE-XGS-01513] c 03 N71-23336

Compressible biomedical electrode  
[NASA-CASE-MS-C-13648] c 05 N72-27103

Improved chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N82-22672

Solid electrolyte cell  
[NASA-CASE-NPO-15269-1] c 44 N82-29710

**ELECTROLYTIC CELLS**  
Method of making emf cell  
[NASA-CASE-LEW-11359-2] c 03 N72-20034

Electrolytic gas operated actuator  
[NASA-CASE-NPO-11369] c 15 N73-13467

Electrolytic cell structure  
[NASA-CASE-LAR-11042-1] c 33 N75-27252

Reconstituted asbestos matrix --- for use in fuel or electrolysis cells  
[NASA-CASE-MS-C-12568-1] c 24 N76-14204

Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-1] c 33 N80-20487

Cell and method for electrolysis of water and anode  
[NASA-CASE-MS-C-16394-1] c 28 N81-24280

Toroidal cell and battery --- storage battery for high amp-hour load applications  
[NASA-CASE-LEW-12918-1] c 44 N81-24521

Solid electrolyte cell  
[NASA-CASE-NPO-15269-1] c 44 N82-29710

**ELECTROMAGNETIC ABSORPTION**  
Multiple pass reimagining optical system  
[NASA-CASE-ARC-10194-1] c 23 N73-20741

Method and apparatus for background signal reduction in opto-acoustic absorption measurement  
[NASA-CASE-NPO-13683-1] c 35 N77-14411

Electromagnetic radiation energy arrangement --- coatings for solar energy absorption and infrared reflection  
[NASA-CASE-WOO-00428-1] c 32 N79-19186

Electromagnetic power absorber  
[NASA-CASE-NPO-13830-1] c 32 N80-14281

**ELECTROMAGNETIC FIELDS**  
Tumbler system to provide random motion  
[NASA-CASE-XGS-02437] c 15 N69-21472

Vacuum evaporator with electromagnetic ion steering Patent  
[NASA-CASE-NPO-10331] c 09 N71-26701

Metallic intrusion detector system  
[NASA-CASE-ARC-10265-1] c 10 N72-28240

Low power electromagnetic flowmeter providing accurate zero set  
[NASA-CASE-ARC-10362-1] c 14 N73-32326

Electromagnetic flow rate meter --- for liquid metals  
[NASA-CASE-LEW-10981-1] c 35 N74-21018

Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411

**ELECTROMAGNETIC HAMMERS**  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114] c 15 N71-17650

Magnetomotive metal working device Patent  
[NASA-CASE-XMF-03793] c 15 N71-24833

**ELECTROMAGNETIC INTERFERENCE**  
Sealed cabinetry Patent  
[NASA-CASE-MS-C-12168-1] c 09 N71-18600

Method of treating the surface of a glass member  
[NASA-CASE-GSC-12110-1] c 27 N77-32308

**ELECTROMAGNETIC MEASUREMENT**  
Method and apparatus for determining electromagnetic characteristics of large surface area passive reflectors Patent  
[NASA-CASE-XGS-02608] c 07 N70-41678

Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411

Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779

**ELECTROMAGNETIC NOISE**  
Parametric amplifiers with idler circuit feedback  
[NASA-CASE-LAR-10253-1] c 09 N72-25258

Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244

Filtering device --- removing electromagnetic noise from voice communication signals  
[NASA-CASE-MFS-22729-1] c 32 N76-21366

**ELECTROMAGNETIC PROPULSION**  
Hypervelocity gun --- using both electric and chemical energy for projectile propulsion  
[NASA-CASE-XLE-03186-1] c 09 N79-21084

**ELECTROMAGNETIC PUMPS**  
Multiducted electromagnetic pump Patent  
[NASA-CASE-NPO-10755] c 15 N71-27084

**ELECTROMAGNETIC RADIATION**  
Inflatable radar reflector unit Patent  
[NASA-CASE-XMS-00893] c 07 N70-40063

Circulator having quarter wavelength resonant post and parametric amplifier circuits utilizing the same Patent  
[NASA-CASE-XNP-02140] c 09 N71-23097

Electromagnetic polarization systems and methods Patent  
[NASA-CASE-GSC-10021-1] c 09 N71-24595

Antenna design for surface wave suppression Patent  
[NASA-CASE-XLA-10772] c 07 N71-28980

Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130

Method and apparatus for measuring electromagnetic radiation  
[NASA-CASE-LEW-11159-1] c 14 N73-28488

Hyperthermia heating apparatus --- cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996

**ELECTROMAGNETIC SHIELDING**  
Method of making shielded flat cable Patent  
[NASA-CASE-MFS-13687] c 09 N71-28691

Wire stripper  
[NASA-CASE-FRC-10111-1] c 37 N79-10419

Shielded conductor cable system  
[NASA-CASE-MS-C-12745-1] c 33 N81-27397

**ELECTROMAGNETIC WAVE FILTERS**  
Laser camera and diffusion filter therefore Patent  
[NASA-CASE-NPO-10417] c 16 N71-33410

**ELECTROMAGNETIC WAVE TRANSMISSION**  
Method and apparatus for determining electromagnetic characteristics of large surface area passive reflectors Patent  
[NASA-CASE-XGS-02608] c 07 N70-41678

Gyrotron transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N81-16384

**ELECTROMAGNETISM**  
Detenting servomotor Patent  
[NASA-CASE-XNP-06938] c 15 N71-24695

Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 33 N81-22279

**ELECTROMAGNETS**  
Electromagnetic mirror drive system  
[NASA-CASE-XLA-03724] c 14 N69-27461

Solenoid construction Patent  
[NASA-CASE-XNP-01951] c 09 N70-41929

Position sensing device employing misaligned magnetic field generating and detecting apparatus Patent  
[NASA-CASE-XGS-07514] c 23 N71-16099

Safe-arm initiator Patent  
[NASA-CASE-LAR-10372] c 09 N71-18599

Magnetic bearing --- for supplying magnetic fluxes  
[NASA-CASE-GSC-11079-1] c 37 N75-18574

Linear magnetic bearings --- active magnetic suspension of armatures  
[NASA-CASE-GSC-12582-1] c 37 N81-16469

**ELECTROMECHANICAL DEVICES**  
Electromechanical actuator  
[NASA-CASE-XNP-05975] c 15 N69-23185

Bimetallic power controlled actuator  
[NASA-CASE-XNP-09776] c 09 N69-39929



Apparatus for coupling a plurality of ungrounded circuits to a grounded circuit Patent  
[NASA-CASE-XAC-00086] c 09 N70-33182

Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
[NASA-CASE-XGS-03532] c 14 N71-17627

Mechanical actuator Patent  
[NASA-CASE-XGS-04548] c 15 N71-24045

Transverse piezoresistance and pinch effect electromechanical transducers Patent  
[NASA-CASE-ERC-10088] c 26 N71-25490

Electromechanical control actuator system Patent  
[NASA-CASE-ERC-10022] c 15 N71-26635

Pressure sensitive transducers Patent  
[NASA-CASE-ERC-10087] c 14 N71-27334

Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-10503-1] c 09 N72-21248

Ferrofluidic solenoid  
[NASA-CASE-NPO-11738-1] c 09 N73-30185

Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-11389-1] c 33 N77-26387

Rotary electric device  
[NASA-CASE-GSC-12138-1] c 33 N79-20314

Coal-shale interface detection system  
[NASA-CASE-MFS-23720-2] c 43 N80-14423

Coal-shale interface detector  
[NASA-CASE-MFS-23720-1] c 43 N80-23711

Magnetic field control — electromechanical torquing device  
[NASA-CASE-MFS-23828-1] c 33 N82-26569

**ELECTROMETERS**

Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c 09 N71-23021

Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659

**ELECTROMIGRATION**

Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N81-19944

Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N82-30105

**ELECTROMOTIVE FORCES**

Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579

**ELECTRON ATTACHMENT**

High resolution threshold photoelectron spectroscopy by electron attachment  
[NASA-CASE-NPO-14078-1] c 72 N80-14877

**ELECTRON BEAM WELDING**

Split welding chamber Patent  
[NASA-CASE-LEW-11531] c 15 N71-14932

Device for preventing high voltage arcing in electron beam welding Patent  
[NASA-CASE-XMF-08522] c 15 N71-19486

**ELECTRON BEAMS**

Electronic beam switching commutator Patent  
[NASA-CASE-XGS-01451] c 09 N71-10677

Method and means for an improved electron beam scanning system Patent  
[NASA-CASE-ERC-10552] c 09 N71-12539

Electron beam instrument for measuring electric fields Patent  
[NASA-CASE-XMF-10289] c 14 N71-23699

Apparatus for determining the deflection of an electron beam impinging on a target Patent  
[NASA-CASE-XMF-06617] c 09 N71-24843

Infrared detectors  
[NASA-CASE-LAR-10728-1] c 14 N73-12445

Electron beam controller — using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c 33 N74-10195

Image tube — deriving electron beam replica of image  
[NASA-CASE-GSC-11602-1] c 33 N74-21850

Very high intensity light source using a cathode ray tube — electron beams  
[NASA-CASE-XNP-01296] c 33 N75-27250

Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N80-19425

A low energy electron magnetometer  
[NASA-CASE-LAR-12706-1] c 35 N81-19428

**ELECTRON BOMBARDMENT**

Ion thruster cathode  
[NASA-CASE-XLE-07087] c 06 N69-39889

Device for measuring electron-beam intensities and for subjecting materials to electron irradiation in an electron microscope  
[NASA-CASE-XGS-01725] c 14 N69-39982

Electron bombardment ion engine Patent  
[NASA-CASE-XNP-04124] c 28 N71-21822

Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
[NASA-CASE-XLE-04501] c 09 N71-23190

Single grid accelerator for an ion thruster  
[NASA-CASE-XLE-10453-2] c 28 N73-27699

Containerless high temperature calorimeter apparatus  
[NASA-CASE-MFS-23923-1] c 35 N81-19426

Ion beam textured graphite electrode plates — high efficiency electron tube devices  
[NASA-CASE-LEW-12919-2] c 24 N82-26386

**ELECTRON CAPTURE**

Multistage depressed collector for dual mode operation — for microwave transmitting tubes  
[NASA-CASE-LEW-13282-1] c 33 N82-24415

**ELECTRON DISTRIBUTION**

Measurement of plasma temperature and density using radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156

**ELECTRON EMISSION**

Node thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898

**ELECTRON FLUX DENSITY**

Device for measuring electron-beam intensities and for subjecting materials to electron irradiation in an electron microscope  
[NASA-CASE-XGS-01725] c 14 N69-39982

**ELECTRON IRRADIATION**

Ion rocket Patent  
[NASA-CASE-XLE-00376] c 28 N70-37245

**ELECTRON MICROSCOPES**

Device for measuring electron-beam intensities and for subjecting materials to electron irradiation in an electron microscope  
[NASA-CASE-XGS-01725] c 14 N69-39982

Method of forming aperture plate for electron microscope  
[NASA-CASE-ARC-10448-2] c 74 N75-12732

Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408

**ELECTRON PHOTON CASCADES**

Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473

**ELECTRON PLASMA**

Method and apparatus for producing a plasma Patent  
[NASA-CASE-XLA-00147] c 25 N70-34661

**ELECTRON SCATTERING**

Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 72 N82-24953

**ELECTRON SOURCES**

Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408

**ELECTRON TRANSFER**

Process for reducing secondary electron emission Patent  
[NASA-CASE-XNP-09469] c 24 N71-25555

**ELECTRON TRANSITIONS**

Diatomic infrared gasdynamic laser — for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c 36 N75-31426

**ELECTRON TUBES**

Direct radiation cooling of the collector of linear beam tubes  
[NASA-CASE-XNP-09227] c 15 N69-24319

Radiant heater having formed filaments Patent  
[NASA-CASE-XLE-00387] c 33 N70-34812

Gyrotron transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N81-16384

**ELECTRON TUNNELING**

Doped Josephson tunneling junction for use in a sensitive IR detector  
[NASA-CASE-NPO-13348-1] c 33 N75-31332

**ELECTRONIC CONTROL**

Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460

Electronic motor control system Patent  
[NASA-CASE-XMF-01129] c 09 N70-38712

Phase multiplying electronic scanning system Patent  
[NASA-CASE-NPO-10302] c 10 N71-26142

Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173

Peak acceleration limiter for vibrational tester Patent  
[NASA-CASE-NPO-10556] c 14 N71-27185

Digital control and information system  
[NASA-CASE-NPO-11016] c 08 N72-31226

**ELECTRONIC EQUIPMENT**

Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460

Pulse activated polarographic hydrogen detector Patent  
[NASA-CASE-XMF-06531] c 14 N71-17575

Stable amplifier having a stable quiescent point Patent  
[NASA-CASE-XGS-02812] c 09 N71-19466

Static inverter Patent  
[NASA-CASE-XGS-05289] c 09 N71-19470

Circulator having quarter wavelength resonant post and parametric amplifier circuits utilizing the same Patent  
[NASA-CASE-XNP-02140] c 09 N71-23097

Optimum predetection diversity receiving system Patent  
[NASA-CASE-XGS-00740] c 07 N71-23098

Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
[NASA-CASE-XLE-04501] c 09 N71-23190

Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c 33 N71-24876

A solid state acoustic variable time delay line Patent  
[NASA-CASE-ERC-10032] c 10 N71-25900

Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c 14 N71-26244

Fringe counter for interferometers Patent  
[NASA-CASE-LAR-10204] c 14 N71-27215

Temperature regulation circuit Patent  
[NASA-CASE-XNP-02792] c 14 N71-28958

Method and apparatus for data compression by a decreasing slope threshold test  
[NASA-CASE-NPO-10769] c 08 N72-11171

Universal environment package with sectional component housing  
[NASA-CASE-KSC-10031] c 15 N72-22486

Lead attachment to high temperature devices  
[NASA-CASE-ERC-10224] c 09 N72-25261

Method and apparatus for detecting surface ions on silicon diodes and transistors  
[NASA-CASE-ERC-10325] c 15 N72-25457

Versatile arithmetic unit for high speed sequential decoder  
[NASA-CASE-NPO-11371] c 08 N73-12177

Data processor with conditionally supplied clock signals  
[NASA-CASE-GSC-10975-1] c 08 N73-13187

Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-1] c 14 N73-14428

Phase control circuits using frequency multiplications for phased array antennas  
[NASA-CASE-ERC-10285] c 10 N73-16206

Junction range finder  
[NASA-CASE-KSC-10108] c 14 N73-25461

Electronic strain-level counter  
[NASA-CASE-LAR-10756-1] c 32 N73-26910

Automatic vehicle location system  
[NASA-CASE-NPO-11850-1] c 32 N74-12912

Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014

Electronic analog divider  
[NASA-CASE-LEW-11881-1] c 33 N77-17354

Moisture content and gas sampling device — to test hermetically sealed electronic equipment  
[NASA-CASE-MSC-18866-1] c 35 N82-26634

**ELECTRONIC EQUIPMENT TESTS**

Analog to digital converter tester Patent  
[NASA-CASE-XLA-06713] c 14 N71-28991

Signal conditioner test set  
[NASA-CASE-KSC-10750-1] c 35 N75-12270

Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359

**ELECTRONIC FILTERS**

Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c 09 N73-20231

Capacitance multiplier and filter synthesizing network  
[NASA-CASE-NPO-11948-1] c 33 N74-32712

Notch filter  
[NASA-CASE-MFS-23303-1] c 32 N77-18307

**ELECTRONIC MODULES**

Thermal conductive connection and method of making same Patent  
[NASA-CASE-XMS-02087] c 09 N70-41717

Solar cell submodule Patent  
[NASA-CASE-XNP-05821] c 03 N71-11056

Heat conductive resiliently compressible structure for space electronics package modules Patent  
[NASA-CASE-MSC-12389] c 33 N71-29052

Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c 37 N74-32918

Phase substitution of spare converter for a failed one of parallel phase staggered converters  
[NASA-CASE-NPO-13812-1] c 33 N77-30365

Method of making encapsulated solar cell modules  
[NASA-CASE-LEW-12185-1] c 44 N78-25528

Electronically scanned pressure sensor module with in situ calibration capability  
[NASA-CASE-LAR-12230-1] c 35 N79-14347

Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254

Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257



- Method and apparatus for fabricating improved solar cell modules  
[NASA-CASE-NPO-14416-1] c 44 N81-14389
- Redundant operation of counter modules  
[NASA-CASE-NPO-14416-1] c 60 N81-15706
- Electronic scanning pressure measuring system and transducer package  
[NASA-CASE-ARC-11361-1] c 35 N82-26635
- ELECTRONIC PACKAGING**
- Electrical feed-through connection for printed circuit boards and printed cable  
[NASA-CASE-XMF-01483] c 14 N69-27431
- Capacitor and method of making same Patent  
[NASA-CASE-LEW-10364-1] c 09 N71-13522
- Method of evaluating moisture barrier properties of encapsulating materials Patent  
[NASA-CASE-NPO-10051] c 18 N71-24934
- Microelectronic module package Patent  
[NASA-CASE-XMS-02182] c 10 N71-28783
- Frangible electrochemical cell  
[NASA-CASE-XGS-10010] c 03 N72-15986
- Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c 15 N73-14469
- Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c 10 N73-25243
- Integrated circuit package with lead structure and method of preparing the same  
[NASA-CASE-MFS-21374-1] c 33 N74-12951
- Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c 37 N74-32918
- Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467
- Computer circuit card puller  
[NASA-CASE-FRC-11042-1] c 60 N82-24839
- Hermetically sealable package for hybrid solid-state electronic devices and the like  
[NASA-CASE-MS-C-20181-1] c 33 N82-28549
- ELECTRONIC RECORDING SYSTEMS**
- Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339
- A self-correcting electronically scanned pressure sensor  
[NASA-CASE-LAR-12686-1] c 09 N81-27121
- ELECTRONIC TRANSDUCERS**
- Fiber optic vibration transducer and analyzer Patent  
[NASA-CASE-XMF-02433] c 14 N71-10616
- Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597
- Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366
- Electromagnetic transducer recording head having a laminated core section and tapered gap  
[NASA-CASE-NPO-10711-1] c 35 N77-21392
- Distributed-switch Dicke radiometers  
[NASA-CASE-GSC-12219-1] c 35 N80-18359
- ELECTROPHORESIS**
- Electrophoretic sample insertion — device for uniformly distributing samples in flow path  
[NASA-CASE-MFS-21395-1] c 25 N74-26948
- Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c 34 N74-27744
- Automatic multiple-sample applicator and electrophoresis apparatus  
[NASA-CASE-ARC-10991-1] c 25 N78-14104
- Portable electrophoresis apparatus using minimum electrolyte  
[NASA-CASE-NPO-13274-1] c 25 N79-10163
- Microelectrophoretic apparatus and process  
[NASA-CASE-ARC-11121-1] c 25 N79-14169
- Electrophoretic fractional elution apparatus employing a rotational seal fraction collector  
[NASA-CASE-MFS-23284-1] c 37 N80-14397
- Method for separating biological cells — suspended in aqueous polymer systems  
[NASA-CASE-MFS-23883-1] c 51 N80-16715
- Static continuous electrophoresis device  
[NASA-CASE-MFS-25306-1] c 25 N82-11147
- ELECTROPHOTOMETERS**
- Method and device for detecting voids in low density material Patent  
[NASA-CASE-MFS-20044] c 14 N71-28993
- ELECTROPHYSIOLOGY**
- Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618
- ELECTROPLATING**
- Method of plating copper on aluminum Patent  
[NASA-CASE-XLA-08966-1] c 17 N71-25903
- Method of making shielded flat cable Patent  
[NASA-CASE-MFS-13687] c 09 N71-28691
- Method and apparatus for sputtering utilizing an aperture electrode and a pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c 17 N73-24569
- Method of forming oxide coatings  
[NASA-CASE-LEW-13132-1] c 44 N81-27616
- Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524
- ELECTROSTATIC CHARGE**
- Electrostatic charged particle analyzer having deflection members shaped according to the periodic voltage applied thereto Patent  
[NASA-CASE-XAC-05506-1] c 24 N71-16095
- Electrostatic measurement system — for contact-electrifying a dielectric  
[NASA-CASE-MFS-22129-1] c 33 N75-18477
- Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401
- ELECTROSTATIC ENGINES**
- Colloid propulsion method and apparatus Patent  
[NASA-CASE-XLE-00817] c 28 N70-33265
- Ion thruster cathode Patent Application  
[NASA-CASE-LEW-10814-1] c 28 N70-35422
- Ion rocket Patent  
[NASA-CASE-XLE-00376] c 28 N70-37245
- Electrostatic ion rocket engine Patent  
[NASA-CASE-XLE-02066] c 28 N71-15661
- ELECTROSTATIC GENERATORS**
- Electrostatic plasma modulator for space vehicle re-entry communication Patent  
[NASA-CASE-XLA-01400] c 07 N70-41331
- ELECTROSTATIC PRECIPITATORS**
- Fine particulate capture device  
[NASA-CASE-LEW-11583-1] c 35 N79-17192
- Small conductive particle sensor — microfiber size determination  
[NASA-CASE-LAR-12552-1] c 35 N82-11431
- ELECTROSTATIC PROBES**
- Apparatus for field strength measurement of a space vehicle Patent  
[NASA-CASE-XLE-00820] c 14 N71-16014
- Liquid-immersible electrostatic ultrasonic transducer  
[NASA-CASE-LAR-12465-1] c 33 N82-26572
- ELECTROSTATIC PROPULSION**
- Electrostatic thruster with improved insulators Patent  
[NASA-CASE-XLE-01902] c 28 N71-10574
- Annular slit colloid thruster Patent  
[NASA-CASE-GSC-10709-1] c 28 N71-25213
- ELECTROSTATIC SHIELDING**
- Ion beam thruster shield  
[NASA-CASE-LEW-12082-1] c 20 N77-10148
- Shielded conductor cable system  
[NASA-CASE-MS-C-12745-1] c 33 N81-27397
- ELECTROSTATICS**
- Controllable high voltage source having fast settling time  
[NASA-CASE-GSC-11844-1] c 33 N75-19522
- ELECTROTHERMAL ENGINES**
- Electro-thermal rocket Patent  
[NASA-CASE-XLE-00267] c 28 N70-33356
- Electrothermal rockets having improved heat exchangers Patent  
[NASA-CASE-XLE-01783] c 28 N70-34175
- ELEVATION**
- Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c 14 N71-26627
- Emergency escape system Patent  
[NASA-CASE-XKS-07814] c 15 N71-27067
- ELEVATORS (LIFTS)**
- Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815
- Cable stabilizer for open shaft cable operated elevators  
[NASA-CASE-KSC-10513] c 15 N72-25453
- ELEVONS**
- High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088
- ELLIPSES**
- Ellipsograph for pantograph Patent  
[NASA-CASE-XLA-03102] c 14 N71-21079
- ELLIPSOMETERS**
- Remote sensing of vegetation and soil using microwave ellipsometry  
[NASA-CASE-GSC-11976-1] c 43 N78-10529
- ELONGATION**
- Strain gauge measuring techniques Patent  
[NASA-CASE-XGS-04478] c 14 N71-24233
- Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c 35 N77-22449
- ELUTION**
- Amino acid analysis  
[NASA-CASE-NPO-12130-1] c 25 N75-14844
- Electrophoretic fractional elution apparatus employing a rotational seal fraction collector  
[NASA-CASE-MFS-23284-1] c 37 N80-14397
- EMERGENCIES**
- Silent emergency alarm system for schools and the like  
[NASA-CASE-NPO-11307-1] c 10 N73-30205
- Emergency space-suit helmet  
[NASA-CASE-MS-C-10954-1] c 54 N78-18761
- EMERGENCY BREATHING TECHNIQUES**
- Resuscitation apparatus Patent  
[NASA-CASE-XMS-01115] c 05 N70-39922
- EMERGENCY LIFE SUSTAINING SYSTEMS**
- Orbital escape device Patent  
[NASA-CASE-XMS-06162] c 31 N71-28851
- Emergency lunar communications system  
[NASA-CASE-MFS-21042] c 07 N72-25171
- Emergency descent device  
[NASA-CASE-MFS-23074-1] c 54 N77-21844
- EMISSION SPECTRA**
- Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871
- EMITTANCE**
- Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875
- EMITTERS**
- Coaxial inverted geometry transistor having buried emitter  
[NASA-CASE-ARC-10330-1] c 09 N73-32112
- EMULSIONS**
- Apparatus for obtaining isotropic irradiation of a specimen  
[NASA-CASE-MFS-20095] c 24 N72-11595
- ENAMELS**
- Refractory porcelain enamel passive control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c 27 N75-27160
- ENCAPSULATING**
- Bacteriostatic conformal coating and methods of application Patent  
[NASA-CASE-GSC-10007] c 18 N71-16046
- Flexible, repairable, portable material for electrical connectors Patent  
[NASA-CASE-XGS-05180] c 18 N71-25881
- Orifice gross leak tester Patent  
[NASA-CASE-ERC-10150] c 14 N71-28992
- Solar cell matrix  
[NASA-CASE-NPO-11190] c 03 N71-34044
- Method of making encapsulated solar cell modules  
[NASA-CASE-LEW-12185-1] c 44 N78-25528
- Method and system for nuclear waste disposal — control valves for encapsulating wastes  
[NASA-CASE-NPO-15454-1] c 73 N82-12916
- ENCLOSURES**
- Radio frequency shielded enclosure Patent  
[NASA-CASE-MF-09422] c 07 N71-19436
- Totally confined explosive welding  
[NASA-CASE-LAR-10941-2] c 37 N79-13364
- ENDOSCOPES**
- Boreoscope with variable angle scope  
[NASA-CASE-MFS-15162] c 14 N72-32452
- Apparatus for endoscopic examination — analysis of the propulsion system configuration and transmitter  
[NASA-CASE-NPO-14092-1] c 52 N80-16725
- ENDOTHERMIC REACTIONS**
- Ablation sensor  
[NASA-CASE-XLA-01781] c 14 N69-39975
- ENEMY PERSONNEL**
- Intruder detection system  
[NASA-CASE-ARC-10097-2] c 07 N73-25160
- ENERGY ABSORPTION**
- Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c 15 N70-34861
- Energy absorbing structure Patent Application  
[NASA-CASE-MS-C-12279-1] c 15 N70-35679
- Apparatus for absorbing and measuring power Patent  
[NASA-CASE-XLE-00720] c 14 N70-40201
- Shock absorber Patent  
[NASA-CASE-XMS-03722] c 15 N71-21530
- Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c 15 N71-22877
- Suspended mass impact damper Patent  
[NASA-CASE-LAR-10193-1] c 15 N71-27146
- Energy absorption device Patent  
[NASA-CASE-XNP-01848] c 15 N71-28959
- Impact energy absorbing system utilizing fractureable material  
[NASA-CASE-NPO-10671] c 15 N72-20443
- Docking structure for spacecraft  
[NASA-CASE-MFS-20863] c 31 N73-26876
- Metal shearing energy absorber  
[NASA-CASE-HQN-10638-1] c 15 N73-30460
- ENERGY CONSERVATION**
- Remote platform power conserving system  
[NASA-CASE-GSC-11182-1] c 15 N75-13007
- A simplified power factor controller with increased energy saving circuit  
[NASA-CASE-MFS-25323-1] c 33 N82-12349
- Energy saving electrical motor control system  
[NASA-CASE-MFS-25560-1] c 33 N82-30472



## ENERGY CONVERSION

- Two-fluid magnetohydrodynamic system and method for thermal-electric power conversion Patent  
[NASA-CASE-XNP-00644] c 03 N70-36803
- Device for directionally controlling electromagnetic radiation Patent  
[NASA-CASE-XLE-01716] c 09 N70-40234
- Electromagnetic wave energy converter  
[NASA-CASE-GSC-11394-1] c 09 N73-32109
- Electric power generation system directory from laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524
- Mechanical thermal motor  
[NASA-CASE-MFS-23062-1] c 37 N77-12402
- Low to high temperature energy conversion system  
[NASA-CASE-NPO-13510-1] c 44 N77-32581
- Solar energy collection system  
[NASA-CASE-NPO-13810-1] c 44 N77-32582
- ENERGY CONVERSION EFFICIENCY**
- Trode thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898
- Energy conversion apparatus Patent  
[NASA-CASE-XLE-00212] c 03 N70-34134
- Electronic amplifier with power supply switching Patent  
[NASA-CASE-XMS-00945] c 09 N71-10798
- Energy storage apparatus  
[NASA-CASE-GSC-12030-1] c 44 N78-24608
- Method of construction of a multi-cell solar array  
[NASA-CASE-MFS-23540-1] c 44 N79-26475
- Self-reconfiguring solar cell system  
[NASA-CASE-LEW-12586-1] c 44 N80-14472
- MHD electrical generator  
[NASA-CASE-NPO-15399-1] c 75 N82-24079
- Efficiency of silicon solar cells containing chromium  
[NASA-CASE-NPO-15179-1] c 44 N82-26777
- ENERGY DISSIPATION**
- Frangible tube energy dissipation Patent  
[NASA-CASE-XLA-00754] c 15 N70-34850
- Wingtip vortex dissipator for aircraft  
[NASA-CASE-LAR-11645-1] c 02 N77-10001
- Motion restraining device  
[NASA-CASE-NPO-13619-1] c 37 N78-16369
- ENERGY DISTRIBUTION**
- Method and apparatus for measurement of trap density and energy distribution in dielectric films  
[NASA-CASE-NPO-13443-1] c 76 N76-20994
- Spatial energy distribution — scanning a tunable diode laser beam automatically  
[NASA-CASE-LAR-12631-1] c 35 N82-18557
- ENERGY LEVELS**
- High resolution threshold photoelectron spectroscopy by electron attachment  
[NASA-CASE-NPO-14078-1] c 72 N80-14877
- A low energy electron magnetometer  
[NASA-CASE-LAR-12706-1] c 35 N81-19428
- ENERGY POLICY**
- Solar energy power system  
[NASA-CASE-MFS-21628-2] c 44 N76-23675
- Thermal energy storage system — operating on superheating of liquids  
[NASA-CASE-MFS-23167-1] c 44 N76-31667
- Mount for continuously orienting a collector dish in a system adapted to perform both diurnal and seasonal solar tracking  
[NASA-CASE-MFS-23267-1] c 35 N77-20401
- Lightweight reflector assembly  
[NASA-CASE-NPO-13707-1] c 74 N77-28933
- Solar photolysis of water  
[NASA-CASE-NPO-13675-1] c 44 N77-32580
- Selective coating for solar panels — using black chrome and black nickel  
[NASA-CASE-LEW-12159-1] c 44 N78-19599
- Solar pond  
[NASA-CASE-NPO-13581-2] c 44 N78-31525
- Non-tracking solar energy collector system  
[NASA-CASE-NPO-13813-1] c 44 N78-31526
- Coal desulfurization process  
[NASA-CASE-NPO-13937-1] c 44 N78-31527
- Primary reflector for solar energy collection systems  
[NASA-CASE-NPO-13579-4] c 44 N79-14529
- Primary reflector for solar energy collection systems and method of making same  
[NASA-CASE-NPO-13579-3] c 44 N79-24432
- Solar energy collection system  
[NASA-CASE-NPO-13579-2] c 44 N79-24433
- Combined solar collector and energy storage system  
[NASA-CASE-LAR-12205-1] c 44 N80-20810
- Wind wheel electric power generator  
[NASA-CASE-MFS-23515-1] c 44 N80-21828
- Induced junction solar cell and method of fabrication  
[NASA-CASE-NPO-13786-1] c 44 N80-29835
- Solar energy receiver for a Stirling engine  
[NASA-CASE-NPO-14619-1] c 44 N81-17518
- Copper doped polycrystalline silicon solar cell  
[NASA-CASE-NPO-14670-1] c 44 N81-19558

- Supercritical multicomponent solvent coal extraction  
[NASA-CASE-NPO-15767-1] c 28 N82-12241
- Solar heated fluidized bed gasification system  
[NASA-CASE-NPO-15071-1] c 44 N82-16475
- ENERGY SOURCES**
- Passive synchronized spike generator with high input impedance and low output impedance and capacitor power supply Patent  
[NASA-CASE-XGS-03632] c 09 N71-23311
- Controllable high voltage source having fast settling time  
[NASA-CASE-GSC-11844-1] c 33 N75-19522
- Wingtip vortex turbine  
[NASA-CASE-LAR-12544-1] c 07 N81-27096
- ENERGY STORAGE**
- Switching mechanism with energy storage means Patent  
[NASA-CASE-XGS-00473] c 03 N70-38713
- Stored charge transistor  
[NASA-CASE-NPO-11156-2] c 33 N75-31331
- Mechanical energy storage device for hip disarticulation  
[NASA-CASE-ARC-10916-1] c 52 N78-10686
- Energy storage apparatus  
[NASA-CASE-GSC-12030-1] c 44 N78-24608
- Rotatable mass for a flywheel  
[NASA-CASE-MFS-23051-1] c 37 N79-10422
- Combined solar collector and energy storage system  
[NASA-CASE-LAR-12205-1] c 44 N80-20810
- Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103
- ENERGY TECHNOLOGY**
- Solar energy collection system  
[NASA-CASE-NPO-13810-1] c 44 N77-32582
- Method for producing solar energy panels by automation  
[NASA-CASE-LEW-12541-1] c 44 N78-25529
- Hydrogen-fueled engine  
[NASA-CASE-NPO-13763-1] c 44 N78-33526
- Surfactant-assisted liquefaction of particulate carbonaceous substances  
[NASA-CASE-NPO-13904-1] c 25 N79-11152
- Back wall solar cell  
[NASA-CASE-LEW-12236-2] c 44 N79-14528
- Solar cell module assembly jig  
[NASA-CASE-XGS-00829-1] c 44 N79-19447
- Solar energy collection system  
[NASA-CASE-NPO-13579-2] c 44 N79-24433
- Solar concentrator  
[NASA-CASE-MFS-23727-1] c 44 N80-14473
- Method for forming a solar array strip  
[NASA-CASE-NPO-13652-3] c 44 N80-14474
- ENERGY TRANSFER**
- Solar energy absorber  
[NASA-CASE-MFS-22743-1] c 44 N76-22657
- ENGINE ANALYZERS**
- Indicated mean-effective pressure instrument  
[NASA-CASE-LEW-12661-1] c 35 N79-14345
- ENGINE CONTROL**
- Regenerative braking system Patent  
[NASA-CASE-XMF-01096] c 10 N71-16030
- Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c 05 N75-12930
- Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318
- Apparatus for sensor failure detection and correction in a gas turbine engine control system  
[NASA-CASE-LEW-12907-2] c 07 N81-19115
- ENGINE COOLANTS**
- Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535
- Injector for bipropellant rocket engines Patent  
[NASA-CASE-XMF-00148] c 28 N70-38710
- ENGINE DESIGN**
- Gas turbine combustion apparatus Patent  
[NASA-CASE-XLE-103477-1] c 28 N71-20330
- Construction and method of arranging a plurality of ion engines to form a cluster Patent  
[NASA-CASE-XNP-02923] c 28 N71-23081
- Space vehicle system  
[NASA-CASE-MSC-12561-1] c 18 N76-17185
- Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c 07 N76-18131
- Solid propellant motor  
[NASA-CASE-NPO-11458A] c 20 N78-32179
- Hydrogen-fueled engine  
[NASA-CASE-NPO-13763-1] c 44 N78-33526
- Method and apparatus for rapid thrust increases in a turbofan engine  
[NASA-CASE-LEW-12971-1] c 07 N80-18039
- Free-piston regenerative hot gas hydraulic engine  
[NASA-CASE-LEW-12274-1] c 37 N80-31790
- Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432
- Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370

- Solar engine  
[NASA-CASE-LAR-12148-1] c 44 N82-24640
- ENGINE FAILURE**
- System for monitoring the presence of neutrals in a stream of ions Patent  
[NASA-CASE-XNP-02592] c 24 N71-20518
- ENGINE INLETS**
- Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270
- The engine air intake system  
[NASA-CASE-ARC-10761-1] c 07 N77-18154
- Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976
- ENGINE MONITORING INSTRUMENTS**
- System for monitoring the presence of neutrals in a stream of ions Patent  
[NASA-CASE-XNP-02592] c 24 N71-20518
- ENGINE NOISE**
- Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270
- Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055
- Multiple pure tone elimination strut assembly — air breathing engines  
[NASA-CASE-FRC-11062-1] c 71 N82-16800
- ENGINE PARTS**
- Gas turbine engine with convertible accessories  
[NASA-CASE-LEW-12390-1] c 07 N78-17056
- Gas path seal  
[NASA-CASE-NPO-12131-3] c 37 N80-18400
- Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 25 N81-19245
- Method of protecting a surface with a silicon-slurry/aluminate coating — coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441
- ENGINE STARTERS**
- Portable device for use in starting air-start-units for aircraft and having cable lead testing capability  
[NASA-CASE-FRC-10113-1] c 33 N80-26599
- ENGINE TESTS**
- Electric propulsion engine test chamber Patent  
[NASA-CASE-XLE-00252] c 11 N70-34844
- ENGINEERING DRAWINGS**
- High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817
- Lifting body Patent Application  
[NASA-CASE-FRC-10063] c 01 N71-12217
- Optical communications system Patent  
[NASA-CASE-XLA-01090] c 07 N71-12389
- Method of making a molded connector Patent  
[NASA-CASE-XMF-03498] c 15 N71-15986
- ENTHALPY**
- Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c 14 N70-34156
- ENTRAINMENT**
- Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345
- ENUMERATION**
- Apparatus and process for microbial detection and enumeration  
[NASA-CASE-LAR-12709-1] c 35 N82-28604
- ENVIRONMENT SIMULATION**
- Skeletal stressing method and apparatus Patent  
[NASA-CASE-ARC-10100-1] c 05 N71-24738
- Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619
- ENVIRONMENT SIMULATORS**
- Space simulator Patent  
[NASA-CASE-NPO-10141] c 11 N71-24964
- ENVIRONMENTAL CONTROL**
- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203
- Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721
- Thermal control panel Patent  
[NASA-CASE-XLA-07728] c 33 N71-22890
- Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725
- Active vibration isolator for flexible bodies Patent  
[NASA-CASE-LAR-10106-1] c 15 N71-27169
- Autoignition test cell Patent  
[NASA-CASE-KSC-10198] c 11 N71-28629
- Universal environment package with sectional component housing  
[NASA-CASE-KSC-10031] c 15 N72-22486
- Air conditioned suit  
[NASA-CASE-LAR-10076-1] c 05 N73-20137
- Dual stage check valve  
[NASA-CASE-MSC-13587-1] c 15 N73-30459



- Space vehicle with artificial gravity and earth-like environment  
[NASA-CASE-LEW-11101-1] c 31 N73-32750
- ENVIRONMENTAL ENGINEERING**  
Thermal control wall panel Patent  
[NASA-CASE-XLA-01243] c 33 N71-22792
- ENVIRONMENTAL MONITORING**  
System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603
- ENVIRONMENTAL TESTS**  
Multiple environment materials test chamber having a multiple port X-ray tube for irradiating a plurality of samples Patent  
[NASA-CASE-XMS-02930] c 11 N71-23042  
Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161  
Flammability test chamber Patent  
[NASA-CASE-KSC-10126] c 11 N71-24985  
Multi axes vibration fixtures  
[NASA-CASE-MFS-20242] c 14 N73-19421  
Fixture for environmental exposure of structural materials under compression  
[NASA-CASE-LAR-12602-1] c 35 N81-19429
- ENVIRONMENTS**  
Hermetically sealed elbow actuator  
[NASA-CASE-MFS-14710] c 09 N72-22195
- ENZYME ACTIVITY**  
Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487  
Method of detecting and counting bacteria in body fluids  
[NASA-CASE-GSC-11092-2] c 04 N73-27052
- ENZYMES**  
Protein sterilization method of firefly luciferase using reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c 06 N73-27086
- EPICYCLOIDS**  
Sequencing device utilizing planetary gear set  
[NASA-CASE-MSC-19514-1] c 37 N79-20377
- EPITAXY**  
Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910  
Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 25 N82-26397
- EPOXY COMPOUNDS**  
Synthesis of siloxane-containing epoxy polymers Patent  
[NASA-CASE-MFS-13994-1] c 06 N71-11240  
Siloxane containing epoxide compounds  
[NASA-CASE-MFS-13994-2] c 06 N72-25148  
Fire protection covering for small diameter missiles  
[NASA-CASE-ARC-11104-1] c 15 N79-26100
- EPOXY MATRIX COMPOSITES**  
Fiberglass/epoxy composite automotive door structure including a glass-reinforced intrusion strip  
[NASA-CASE-NPO-15057-1] c 24 N81-19230
- EPOXY RESINS**  
Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c 03 N71-11053  
Sealing device for an electrochemical cell Patent  
[NASA-CASE-XGS-02630] c 03 N71-22974  
Hydroforming techniques using epoxy molds Patent  
[NASA-CASE-XLE-05641-1] c 15 N71-26346  
Pressure sensitive transducers Patent  
[NASA-CASE-ERC-10087] c 14 N71-27334  
Epoxy-aziridine polymer product Patent  
[NASA-CASE-NPO-10701] c 06 N71-28620  
Method of repairing discontinuity in fiberglass structures  
[NASA-CASE-LAR-10416-1] c 24 N74-30001  
Transparent fire resistant polymers structures  
[NASA-CASE-ARC-10813-1] c 27 N76-16230  
Curing agent for polyepoxides and epoxy resins and composites cured therewith — preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260  
Universal connectors for joining stringers  
[NASA-CASE-LAR-12744-1] c 37 N81-31551  
Method of neutralizing the corrosive surface of amine-cured epoxy resins  
[NASA-CASE-GSC-12686-1] c 27 N82-10227
- EQUATIONS OF MOTION**  
Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 54 N81-15699
- EQUIPMENT**  
Bimetallic fluid displacement apparatus — for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c 35 N74-15126  
Apparatus for supplying conditioned air at a substantially constant temperature and humidity  
[NASA-CASE-GSC-12191-1] c 31 N80-32583
- EQUIPMENT SPECIFICATIONS**  
Differential pressure cell Patent  
[NASA-CASE-XAC-00042] c 14 N70-34816
- High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817  
Optical torque meter Patent  
[NASA-CASE-XLE-00503] c 14 N70-34818  
Magnetically centered liquid column float Patent  
[NASA-CASE-XAC-00030] c 14 N70-34820  
Electric propulsion engine test chamber Patent  
[NASA-CASE-XLE-00252] c 11 N70-34844  
Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860  
Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c 15 N70-34861  
Slit regulated gas journal bearing Patent  
[NASA-CASE-XNP-00476] c 15 N70-38620  
Optical communications system Patent  
[NASA-CASE-XLA-01090] c 07 N71-12389  
Stretching Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159  
Rocket thrust throttling system  
[NASA-CASE-LEW-10374-1] c 28 N73-13773  
Process for making diamonds  
[NASA-CASE-MFS-20698-2] c 15 N73-19457  
Anti-buckling fatigue test assembly — for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c 09 N74-19528  
Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c 34 N74-27744  
Thermocouple tape — developed from thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c 35 N76-15434  
Field effect transistor and method of construction thereof  
[NASA-CASE-MFS-23312-1] c 33 N78-27326  
Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072
- EQUIPOTENTIALS**  
Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11195  
Instrument for measuring potentials on two dimensional electric field plots Patent  
[NASA-CASE-XLA-08493] c 10 N71-19421
- ERGOMETERS**  
Restraint system for ergometer  
[NASA-CASE-MFS-21046-1] c 14 N73-27377  
Ergometer  
[NASA-CASE-MFS-21109-1] c 05 N73-27941  
Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MFS-21010-1] c 05 N73-30078  
Foot pedal operated fluid type exercising device  
[NASA-CASE-MSC-11561-1] c 05 N73-32014  
Ergometer calibrator — for any ergometer utilizing rotating shaft  
[NASA-CASE-MFS-21045-1] c 35 N75-15932
- EROSION**  
Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206
- ERROR ANALYSIS**  
Program for computer aided reliability estimation  
[NASA-CASE-NPO-13086-1] c 15 N73-12495  
Bit error rate measurement above and below bit rate tracking threshold  
[NASA-CASE-MSC-12743-1] c 32 N79-10263
- ERROR CORRECTING DEVICES**  
Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c 09 N71-18843  
Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c 07 N71-20814  
Error correcting method and apparatus Patent  
[NASA-CASE-XNP-02748] c 08 N71-22749  
Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175  
Guide for a typewriter  
[NASA-CASE-MFS-15218-1] c 37 N77-19457  
A self-correcting electronically scanned pressure sensor  
[NASA-CASE-LAR-12686-1] c 09 N81-27121
- ERROR DETECTION CODES**  
Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633
- ERROR SIGNALS**  
Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c 09 N71-18843  
Sampled data controller Patent  
[NASA-CASE-GSC-10554-1] c 08 N71-29033
- Bit error rate measurement above and below bit rate tracking threshold  
[NASA-CASE-MSC-12743-1] c 32 N79-10263  
Tnac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N82-26574
- ERRORS**  
Analog-to-digital converter  
[NASA-CASE-MSC-13110-1] c 08 N72-22163
- ESCAPE CAPSULES**  
Aerial capsule emergency separation device Patent  
[NASA-CASE-XLA-00115] c 03 N70-33343  
Emergency escape system Patent  
[NASA-CASE-XKS-02342] c 05 N71-11199  
Emergency earth orbital escape device  
[NASA-CASE-MSC-13281] c 31 N72-18859
- ESCAPE SYSTEMS**  
Emergency escape system Patent  
[NASA-CASE-MSC-12086-1] c 05 N71-12345  
Emergency escape system Patent  
[NASA-CASE-XKS-07814] c 15 N71-27067  
Explosively activated egress area  
[NASA-CASE-LAR-12624-1] c 03 N81-29107
- ESCHERICHIA**  
Method and apparatus for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N82-12739
- ESTERS**  
Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098
- ETCHING**  
Masking device Patent  
[NASA-CASE-XNP-02092] c 15 N70-42033  
Method for etching copper Patent  
[NASA-CASE-XGS-06306] c 17 N71-16044  
High resolution developing of photosensitive resists Patent  
[NASA-CASE-XGS-04993] c 14 N71-17574  
Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828  
Selective plating of etched circuits without removing previous plating Patent  
[NASA-CASE-XGS-03120] c 15 N71-24047  
Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830  
Scanning nozzle plating system — for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c 31 N74-23065  
Method for applying photographic resists to otherwise incompatible substrates  
[NASA-CASE-MSC-18107-1] c 27 N81-25209  
Method of making V-MOS field effect transistors utilizing a two-step anisotropic etching and ion implantation  
[NASA-CASE-GSC-12515-1] c 33 N81-26360  
Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441  
Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 33 N82-24426  
Controlled in-situ etchback  
[NASA-CASE-NPO-15625-1] c 76 N82-25995
- ETHANE**  
The 1,1,1-trifluoro-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312
- ETHERS**  
Method of producing alternating ether siloxane copolymers Patent  
[NASA-CASE-XMF-02584] c 06 N71-20905  
Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c 06 N71-27254  
Polyurethane resins from hydroxy terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c 06 N72-27144  
Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641  
Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643
- ETHYL COMPOUNDS**  
Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MSC-18430-1] c 37 N82-24491
- ETHYLENE OXIDE**  
Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c 27 N70-41897  
Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c 14 N71-20461  
System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724
- EUTECTIC ALLOYS**  
Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c 37 N75-15992



Method of growing composites of the type exhibiting the Soret effect — improved structure of eutectic alloy crystals  
[NASA-CASE-MFS-22926-1] c 24 N77-27187  
Directionally solidified eutectic gamma plus beta nickel-base superalloys  
[NASA-CASE-LEW-12906-1] c 26 N77-32279  
Directionally solidified eutectic gamma-gamma nickel-base superalloys  
[NASA-CASE-LEW-12905-1] c 26 N78-18183  
Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c 24 N79-25143

**EVACUATING (VACUUM)**

Method for making a heat insulating and ablative structure  
[NASA-CASE-XMS-01108] c 15 N69-24322  
Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256  
Leak detector wherein a probe is monitored with ultraviolet radiation Patent  
[NASA-CASE-ERC-10034] c 15 N71-24896  
Evacuated, displacement compression mold — of tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c 31 N75-13111

**EVAPORATION**

Evaporant holder  
[NASA-CASE-XLA-03105] c 15 N69-27483

**EVAPORATIVE COOLING**

Tubular sublimatory evaporator heat sink  
[NASA-CASE-ARC-10912-1] c 34 N77-19353  
Refrigerator module, system and process — regenerative, cryogenic cooling of an infrared radiation detection system  
[NASA-CASE-ARC-11263-1] c 31 N81-27328

**EVAPORATORS**

Evaporant source for vapor deposition Patent  
[NASA-CASE-XMF-06065] c 15 N71-20395  
Deposition apparatus  
[NASA-CASE-LAR-10541-1] c 15 N72-32487

**EXAMINATION**

Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
[NASA-CASE-MFS-23315-1] c 76 N78-24950

**EXCLUSION**

Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090

**EXHAUST GASES**

Device for suppressing sound and heat produced by high-velocity exhaust jets Patent  
[NASA-CASE-XMF-01813] c 28 N70-41582  
Gas turbine exhaust nozzle — for noise reduction  
[NASA-CASE-LEW-11569-1] c 07 N74-15453  
Abating exhaust noises in jet engines  
[NASA-CASE-ARC-10712-1] c 07 N74-33218  
Exhaust flow deflector — for ducted gas flow  
[NASA-CASE-LAR-11570-1] c 34 N76-18364  
Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089  
High performance ammonium nitrate propellant  
[NASA-CASE-NPO-14260-1] c 28 N79-28342  
Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 25 N81-19245  
Supercritical fuel injection system  
[NASA-CASE-LEW-12990-1] c 07 N81-29129

**EXHAUST NOZZLES**

Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c 28 N70-33284  
Nozzle Patent  
[NASA-CASE-XLA-00154] c 28 N70-33374  
Penshape exhaust nozzle for supersonic engine Patent  
[NASA-CASE-XLE-00057] c 28 N70-38711  
Ejection unit Patent  
[NASA-CASE-XNP-00676] c 15 N70-38996  
Two dimensional wedge/translating shroud nozzle  
[NASA-CASE-LAR-11919-1] c 07 N78-27121  
Variable area exhaust nozzle  
[NASA-CASE-LEW-12378-1] c 07 N79-14097  
Propulsive lateral control nozzle  
[NASA-CASE-LAR-12136-1] c 08 N81-33210  
Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 34 N82-20465

**EXOTHERMIC REACTIONS**

Ambient cure polyimide foams — thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215  
Exothermic furnace module  
[NASA-CASE-MFS-25707-1] c 35 N82-26631

**EXPANDABLE STRUCTURES**

Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c 03 N69-21539  
Reflector space satellite Patent  
[NASA-CASE-XLA-00138] c 31 N70-37981

Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579  
Collapsible high gain antenna  
[NASA-CASE-KSC-10392] c 07 N73-26117  
Expandable space frames  
[NASA-CASE-ERC-10365-1] c 31 N73-32749  
Means for accommodating large overstrain in lead wires — by storing extra length of wire in stretchable loop  
[NASA-CASE-LAR-10168-1] c 33 N74-22865  
Antenna deployment mechanism for use with a spacecraft — extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183

**EXPANSION**

Apparatus for measuring swelling characteristics of membranes  
[NASA-CASE-XGS-03865] c 14 N69-21363  
Method for alleviating thermal stress damage in laminates  
[NASA-CASE-LEW-12493-2] c 24 N81-26179

**EXPERIMENTAL DESIGN**

Hydrofoil Patent  
[NASA-CASE-XLA-00229] c 12 N70-33305  
Sealed battery gas manifold construction Patent  
[NASA-CASE-XNP-03378] c 03 N71-11051  
Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193  
G conditioning suit Patent  
[NASA-CASE-XLA-02898] c 05 N71-20268  
Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161

**EXPIRED AIR**

Metabolic rate meter and method  
[NASA-CASE-MSC-12239-1] c 52 N79-21750

**EXPLOSIONS**

Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484

**EXPLOSIVE DEVICES**

Tubular coupling having frangible connecting means  
[NASA-CASE-XLA-02854] c 15 N69-27490  
Hermetically sealed explosive release mechanism Patent  
[NASA-CASE-XGS-00824] c 15 N71-16078  
Nonmagnetic, explosive actuated indexing device Patent  
[NASA-CASE-XGS-02422] c 15 N71-21529  
Linear explosive comparison  
[NASA-CASE-LAR-10800-1] c 33 N72-27959  
Disconnect unit  
[NASA-CASE-NPO-11330] c 33 N73-26958  
Pressure limiting propellant actuating system  
[NASA-CASE-MSC-18179-1] c 20 N80-18097  
Slide release mechanism — for the external tank  
[NASA-CASE-MSC-20080-1] c 37 N82-31688

**EXPLOSIVE FORMING**

Electrical discharge apparatus for forming Patent  
[NASA-CASE-XMF-00375] c 15 N70-34249

**EXPLOSIVE WELDING**

Totally confined explosive welding — apparatus to reduce noise level and protect personnel during explosive bonding  
[NASA-CASE-LAR-10941-1] c 37 N74-21057  
Method of making an explosively welded scarf joint  
[NASA-CASE-LAR-11211-1] c 37 N75-12326  
Totally confined explosive welding  
[NASA-CASE-LAR-10941-2] c 37 N79-13364

**EXPLOSIVES**

Synthesis of superconducting compounds by explosive compaction of powders  
[NASA-CASE-MFS-20861-1] c 18 N73-32437  
Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425  
Electroexplosive device  
[NASA-CASE-NPO-13858-1] c 28 N79-11231

**EXPONENTIAL FUNCTIONS**

Digital quasi-exponential function generator  
[NASA-CASE-NPO-11130] c 08 N72-20176

**EXPOSURE**

Exposure interlock for oscilloscope cameras  
[NASA-CASE-LAR-10319-1] c 14 N73-32322  
Selective image area control of X-ray film exposure density  
[NASA-CASE-NPO-13808-1] c 35 N78-15461  
Method of and apparatus for double-exposure holographic interferometry  
[NASA-CASE-MFS-25405-1] c 35 N81-27459

**EXPULSION BLADDERS**

Expulsion bladder-equipped storage tank structure Patent  
[NASA-CASE-XNP-00612] c 11 N70-38182

**EXTENSIONS**

Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701

**EXTENSOMETERS**

Extensometer frame  
[NASA-CASE-XLA-10322] c 15 N72-17452

Conductive elastomeric extensometer  
[NASA-CASE-MFS-21049-1] c 52 N74-27864  
Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c 35 N77-22449  
Laser extensometer  
[NASA-CASE-MFS-19259-1] c 36 N78-14380

**EXTERNAL COMBUSTION ENGINES**

Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370

**EXTERNAL STORES**

Decoupler pylon, wing/store flutter suppressor  
[NASA-CASE-LAR-12468-1] c 08 N82-32373

**EXTERNAL TANKS**

Slide release mechanism — for the external tank  
[NASA-CASE-MSC-20080-1] c 37 N82-31688

**EXTRACTION**

Liquid-gas separation system Patent  
[NASA-CASE-XMS-01624] c 15 N70-40062  
Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467  
Acoustic bubble removal  
[NASA-CASE-NPO-15334-1] c 37 N82-22497

**EXTRAVEHICULAR ACTIVITY**

Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203  
Hand-held self-maneuvering unit Patent  
[NASA-CASE-XMS-05304] c 05 N71-12336  
Serpentuator Patent  
[NASA-CASE-XMF-05344] c 31 N71-16345  
Fastener apparatus Patent  
[NASA-CASE-ARC-10140-1] c 15 N71-17653  
Extravehicular tunnel suit system Patent  
[NASA-CASE-MSC-12243-1] c 05 N71-24728  
Life support system  
[NASA-CASE-MSC-12411-1] c 05 N72-20096  
Space suit  
[NASA-CASE-MSC-12609-1] c 05 N73-32012  
Absorbent product and articles made therefrom  
[NASA-CASE-MSC-18223-2] c 52 N82-26960  
Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N82-28840

**EXTREMELY LOW RADIO FREQUENCIES**

VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c 07 N71-24614  
Frequency tracked pulse technique for ultrasonic analysis  
[NASA-CASE-LAR-12697-1] c 32 N80-26571

**EXTRUDING**

Extrusion can  
[NASA-CASE-NPO-10812] c 15 N73-13464  
Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125  
Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154

**EYE (ANATOMY)**

Sight switch using an infrared source and sensor Patent  
[NASA-CASE-XMF-03934] c 09 N71-22985  
Ophthalmic method and apparatus  
[NASA-CASE-LEW-11669-1] c 05 N73-27062  
Corneal seal device  
[NASA-CASE-LEW-12258-1] c 52 N77-28716  
Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12723-1] c 52 N80-18690  
Chromatically corrected virtual image visual display — reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185

**EYE EXAMINATIONS**

Visual examination apparatus  
[NASA-CASE-ARC-10329-1] c 05 N73-26072  
Multiparameter vision testing apparatus  
[NASA-CASE-MSC-13601-2] c 54 N75-27759  
Visual examination apparatus  
[US-PATENT-RE-28,921] c 52 N76-30793

**EYEPIECES**

Wide angle long eye relief eyepiece Patent  
[NASA-CASE-XMS-06056-1] c 23 N71-24857

**F****FABRICATION**

Pressure variable capacitor  
[NASA-CASE-XNP-09752] c 14 N69-21541  
Method of making a regeneratively cooled combustion chamber Patent  
[NASA-CASE-XLE-00150] c 28 N70-41818  
Solar cell submodule Patent  
[NASA-CASE-XNP-05821] c 03 N71-11056  
Capacitor and method of making same Patent  
[NASA-CASE-LEW-10364-1] c 09 N71-13522  
Solar panel fabrication Patent  
[NASA-CASE-XNP-03413] c 03 N71-26726



Method of forming a root cord restrained convolute section  
[NASA-CASE-MSC-12398] c 05 N72-20098

Method of removing insulated material from insulated wires  
[NASA-CASE-FRC-10038] c 15 N72-20444

Thin film temperature sensor and method of making same  
[NASA-CASE-NPO-11775] c 26 N72-28761

Fabrication of polycrystalline solar cells on low-cost substrates  
[NASA-CASE-GSC-12022-1] c 44 N76-28635

Lightweight reflector assembly  
[NASA-CASE-NPO-13707-1] c 74 N77-28933

Process for spinning flame retardant elastomeric compositions — fabricating synthetic fibers for high oxygen environments  
[NASA-CASE-MSC-14331-3] c 27 N78-32262

Solar array stnp and a method for forming the same  
[NASA-CASE-NPO-13652-1] c 44 N79-17314

Method for fabricating solar cells having integrated collector grts  
[NASA-CASE-LEW-12819-2] c 44 N79-18444

Bonding machine for forming a solar array stnp  
[NASA-CASE-NPO-13652-2] c 44 N79-24431

Method for forming a solar array stnp  
[NASA-CASE-NPO-13652-3] c 44 N80-14474

Induced junction solar cell and method of fabrication  
[NASA-CASE-NPO-13786-1] c 44 N80-29835

Copper doped polycrystalline silicon solar cell  
[NASA-CASE-NPO-14670-1] c 44 N81-19558

Heat exchanger and method of making  
[NASA-CASE-LEW-12441-3] c 44 N81-24519

Photoelectric detection system — manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545

Method of fabricating Schottky Barner solar cell  
[NASA-CASE-NPO-13689-4] c 44 N82-28780

Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708

Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709

**FABRICS**

Method of forming a root cord restrained convolute section  
[NASA-CASE-MSC-12398] c 05 N72-20098

Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c 35 N77-22449

Nozzle extraction process and handlemeter for measuring handle  
[NASA-CASE-LAR-12147-1] c 31 N79-11246

Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-19296

Heat sealable, flame and abrasion resistant coated fabric — clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238

Adjustable high emittance gap filler — reentry shielding for space shuttle vehicles  
[NASA-CASE-LAR-11310-1] c 27 N82-24339

Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MSC-18382-2] c 27 N82-24344

High temperature silicon carbide impregnated insulating fabrics — filling the gaps between space shuttle tiles  
[NASA-CASE-MSC-18832-1] c 24 N82-26388

Absorbent product to absorb fluids — for collection of human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29362

Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-2] c 54 N82-32986

**FABRY-PEROT INTERFEROMETERS**

Retrodirective optical system  
[NASA-CASE-XGS-04480] c 16 N69-27491

**FACSIMILE COMMUNICATION**

Facsimile video remodulation network  
[NASA-CASE-GSC-10185-1] c 07 N72-12081

Spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c 35 N75-19613

**FACTORIAL DESIGN**

Space suit pressure stabilizer Patent  
[NASA-CASE-XLA-05332] c 05 N71-11194

Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11195

**FAIL-SAFE SYSTEMS**

Failsafe multiple transformer circuit configuration  
[NASA-CASE-NPO-11078] c 09 N72-25262

Latch mechanism  
[NASA-CASE-MSC-12549-1] c 37 N74-27903

Safety flywheel — using flexible materials energy storage  
[NASA-CASE-HQN-10888-1] c 44 N79-14527

Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254

Apparatus for sensor failure detection and correction in a gas turbine engine control system  
[NASA-CASE-LEW-12907-2] c 07 N81-19115

Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013

**FAILURE ANALYSIS**

Fatigue failure load indicator  
[NASA-CASE-LAR-12027-1] c 39 N79-22537

**FAILURE MODES**

High speed rolling element bearing  
[NASA-CASE-LEW-10856-1] c 15 N72-22490

Inverter ratio failure detector  
[NASA-CASE-NPO-13160-1] c 35 N74-18090

**FAIRINGS**

Method and system for ejecting fairing sections from a rocket vehicle  
[NASA-CASE-GSC-10590-1] c 31 N73-14853

Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288

**FALLING SPHERES**

Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587

**FAR INFRARED RADIATION**

Collimator of multiple plates with axially aligned identical random arrays of apertures  
[NASA-CASE-MFS-20546-2] c 14 N73-30389

**FAR ULTRAVIOLET RADIATION**

Transient heat transfer gauge Patent  
[NASA-CASE-XNP-09802] c 33 N71-15641

**FARADAY EFFECT**

Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381

**FAST FOURIER TRANSFORMATIONS**

A pipelined digital SAR azimuth correlator using hybrid FFT/transversal-filter  
[NASA-CASE-NPO-15519-1] c 32 N82-12298

**FASTENERS**

Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c 14 N70-34705

Life preserver Patent  
[NASA-CASE-XMS-00864] c 05 N70-36493

All-directional fastener Patent  
[NASA-CASE-XLA-01807] c 15 N71-10799

Fastener apparatus Patent  
[NASA-CASE-ARC-10140-1] c 15 N71-17653

Methods and apparatus employing vibratory energy for wrenching Patent  
[NASA-CASE-MFS-20586] c 15 N71-17686

Coaxial cable connector Patent  
[NASA-CASE-XNP-04732] c 09 N71-20851

Latching mechanism Patent  
[NASA-CASE-XMS-03745] c 15 N71-21076

Central spar and module joint Patent  
[NASA-CASE-XNP-02341] c 15 N71-21531

Threadless fastener apparatus Patent  
[NASA-CASE-XFR-05302] c 15 N71-23254

Flexibly connected support and skin Patent  
[NASA-CASE-XLA-01027] c 31 N71-24035

Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975

Helmet latching and attaching ring  
[NASA-CASE-XMS-04670] c 54 N78-17678

Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467

One-step dual purpose joining technique  
[NASA-CASE-LAR-12595-1] c 33 N82-26571

Reusable captive blind fastener  
[NASA-CASE-MSC-18742-1] c 37 N82-26673

Mechanical fastener  
[NASA-CASE-LAR-12738-1] c 18 N82-33419

**FATIGUE (MATERIALS)**

Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c 32 N71-25360

TV fatigue crack monitoring system  
[NASA-CASE-LAR-11490-1] c 39 N78-16387

Pulsed phase locked loop strain monitor  
[NASA-CASE-LAR-12772-1] c 33 N81-15195

Antenna grout replacement system  
[NASA-CASE-NPO-15205-1] c 37 N81-19457

**FATIGUE LIFE**

Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505

Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-16052

High speed rolling element bearing  
[NASA-CASE-LEW-10856-1] c 15 N72-22490

High speed hybrid bearing comprising a fluid bearing and a rolling bearing connected in series  
[NASA-CASE-LEW-11152-1] c 15 N73-32359

Machine for use in monitoring fatigue life for a plurality of elastomeric specimens  
[NASA-CASE-NPO-13731-1] c 39 N78-10493

**FATIGUE TESTING MACHINES**

Horizontal cryostat for fatigue testing Patent  
[NASA-CASE-XMF-10968] c 14 N71-24234

Light shield and infrared reflector for fatigue testing Patent  
[NASA-CASE-XLA-01782] c 14 N71-26136

**FATIGUE TESTS**

Fatigue testing device Patent  
[NASA-CASE-XLA-02131] c 32 N70-42003

Fatigue failure load indicator  
[NASA-CASE-LAR-12027-1] c 39 N79-22537

Heating and cooling system — for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 39 N80-25693

**FATS**

Oil and fat absorbing polymers  
[NASA-CASE-NPO-11609-2] c 27 N77-31308

**FECES**

Relief container  
[NASA-CASE-XMS-06761] c 05 N69-23192

**FEED SYSTEMS**

Plasma device feed system Patent  
[NASA-CASE-XLE-02902] c 25 N71-21694

Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c 27 N71-28929

Liquid waste feed system  
[NASA-CASE-LAR-10365-1] c 05 N72-27102

Pressurized lighting system  
[NASA-CASE-KSC-10644] c 09 N72-27227

Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c 09 N73-12214

Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c 15 N73-27406

Supercharged topping rocket propellant feed system  
[NASA-CASE-XLE-02062-1] c 20 N80-14188

Method of producing silicon — gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231

Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154

Improved constant-output atomizer  
[NASA-CASE-MFS-25631-1] c 34 N82-10360

**FEEDBACK**

Active RC networks  
[NASA-CASE-ARC-10020] c 10 N72-17172

Feedback shift register-with states decomposed into cycles of equal length  
[NASA-CASE-NPO-11082] c 08 N72-22167

Inverter oscillator with voltage feedback  
[NASA-CASE-NPO-10760] c 09 N72-25254

**FEEDBACK AMPLIFIERS**

Radiometric temperature reference Patent  
[NASA-CASE-MSC-13276-1] c 14 N71-27058

Compensating bandwidth switching transients in an amplifier circuit Patent  
[NASA-CASE-XNP-01107] c 10 N71-28859

Monostable multivibrator with complementary NOR gates Patent  
[NASA-CASE-MSC-13492-1] c 10 N71-28860

High stability amplifier  
[NASA-CASE-GSC-12646-1] c 33 N81-32391

**FEEDBACK CIRCUITS**

Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317

Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503

Frequency control network for a current feedback oscillator Patent  
[NASA-CASE-GSC-10041-1] c 10 N71-19418

Feedback integrator with grounded capacitor Patent  
[NASA-CASE-XAC-10607] c 10 N71-23669

Parametric amplifiers with idler circuit feedback  
[NASA-CASE-LAR-10253-1] c 09 N72-25258

Pseudonoise sequence generators with three tap linear feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175

Logarithmic circuit with wide dynamic range  
[NASA-CASE-GSC-12145-1] c 33 N78-32339

Automatic level control circuit  
[NASA-CASE-KSC-11170-1] c 33 N81-29347

Television camera video level control system — space shuttle orbiters  
[NASA-CASE-MSC-18578-1] c 74 N82-27121

**FEEDBACK CONTROL**

Nonlinear analog-to-digital converter Patent  
[NASA-CASE-XAC-04031] c 08 N71-18594

Pulse-type magnetic core memory element circuit with blocking oscillator feedback Patent  
[NASA-CASE-XGS-03303] c 08 N71-18595

BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890

A dc motor speed control system Patent  
[NASA-CASE-MFS-14610] c 09 N71-28886

Sampled data controller Patent  
[NASA-CASE-GSC-10554-1] c 08 N71-29033



A dc servosystem including an ac motor Patent  
[NASA-CASE-NPO-10700] c 07 N71-33613

Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004

Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10792-1] c 33 N74-11049

Diffused waveguiding capillary tube with distributed feedback for a gas laser  
[NASA-CASE-NPO-13544-1] c 36 N76-18428

The dc-to-dc converters employing staggered-phase power switches with two-loop control  
[NASA-CASE-NPO-13512-1] c 33 N77-10428

System and method for tracking a signal source --- employing feedback control  
[NASA-CASE-HQN-10880-1] c 17 N78-17140

Closed loop spray cooling apparatus --- for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c 31 N78-17237

Wide power range microwave feedback controller  
[NASA-CASE-GSC-12146-1] c 33 N78-32340

Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583

Tuned analog network --- bandpass filter networks  
[NASA-CASE-GSC-12650-1] c 33 N82-10324

Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 36 N82-28619

**FEEDBACK FREQUENCY MODULATION**  
Means for communicating through a layer of ionized gases Patent  
[NASA-CASE-XLA-01127] c 07 N70-41372

Data-aided carrier tracking loops  
[NASA-CASE-NPO-11282] c 10 N73-16205

Linear phase demodulator including a phase locked loop with auxiliary feedback loop  
[NASA-CASE-GSC-12018-1] c 33 N77-14334

**FEEDERS**  
Automatic real-time pair-feeding system for animals  
[NASA-CASE-ARC-10302-1] c 51 N74-15778

**FELTS**  
Thermal insulation attaching means --- adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221

**FEMALES**  
Liquid cooled brassiere and method of diagnosing malignant tumors therewith  
[NASA-CASE-ARC-11007-1] c 52 N77-14736

Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N78-27750

Urine collection apparatus --- feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740

**FERRITES**  
Magnetic recording head and method of making same Patent  
[NASA-CASE-GSC-10097-1] c 08 N71-27210

Method for making conductors for ferrite memory arrays --- from pre-formed metal conductors  
[NASA-CASE-LAR-10994-1] c 24 N75-13032

Device for measuring the ferrite content in an austenitic stainless-steel weld  
[NASA-CASE-MFS-22907-1] c 26 N76-18257

**FERROMAGNETIC MATERIALS**  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-1] c 34 N78-17335

**FERROMAGNETISM**  
High temperature ferromagnetic cobalt-base alloy Patent  
[NASA-CASE-XLE-03629] c 17 N71-23248

**FIBER COMPOSITES**  
Fibrous refractory composite insulation --- shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062

Method for making patterns for resin matrix composites  
[NASA-CASE-ARC-11246-1] c 24 N80-22410

Universal connectors for joining strings  
[NASA-CASE-LAR-12744-1] c 37 N81-31551

**FIBER OPTICS**  
Fiber optic vibration transducer and analyzer Patent  
[NASA-CASE-XMF-02433] c 14 N71-10616

Fiber distributed feedback laser  
[NASA-CASE-NPO-13531-1] c 36 N76-24553

Fiber optic multiplex optical transmission system  
[NASA-CASE-KSC-11047-1] c 74 N78-14889

Low intensity X-ray and gamma-ray imaging device --- fiber optics  
[NASA-CASE-GSC-12263-1] c 74 N79-20857

Fiber optic crossbar switch for automatically patching optical signals  
[NASA-CASE-KSC-11104-1] c 74 N81-12862

Precise RF timing signal distribution to remote stations --- fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186

Apparatus for fiber optic liquid level sensing  
[NASA-CASE-MSC-18674-1] c 74 N81-24907

Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342

Optical gyroscope system  
[NASA-CASE-NPO-14258-1] c 35 N81-33448

Fiber optic transmission line stabilization apparatus and method  
[NASA-CASE-NPO-15036-1] c 74 N82-19029

Optical crystal temperature gauge with fiber optic connections  
[NASA-CASE-MSC-18627-1] c 74 N82-30071

Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659

**FIBER REINFORCED COMPOSITES**  
Fiberglass/epoxy composite automotive door structure including a glass-reinforced intrusion strip  
[NASA-CASE-NPO-15057-1] c 24 N81-19230

Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-19296

Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384

**FIBER RELEASE**  
Curing agent for polyepoxides and epoxy resins and composites cured therewith --- preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260

**FIBER STRENGTH**  
Method and apparatus for strengthening boron fibers --- high temperature oxidation  
[NASA-CASE-LEW-13826-1] c 24 N82-26385

**FIBERS**  
Method for fiberizing ceramic materials Patent  
[NASA-CASE-XNP-00597] c 18 N71-23088

Method and apparatus for fluffing, separating, and cleaning fibers  
[NASA-CASE-LAR-11224-1] c 37 N76-18456

Composite lamination method  
[NASA-CASE-LAR-12019-1] c 24 N78-17150

Dual membrane hollow fiber fuel cell and method of operating same  
[NASA-CASE-NPO-13732-1] c 44 N79-10513

Ion-exchange hollow fibers  
[NASA-CASE-NPO-13309-1] c 25 N81-19244

A method and technique for installing light-weight fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-18934-3] c 24 N82-26387

**FIELD EFFECT TRANSISTORS**  
Frequency to analog converter Patent  
[NASA-CASE-XNP-07040] c 08 N71-12500

Voltage to frequency converter Patent  
[NASA-CASE-GSC-10022-1] c 10 N71-25882

Broadband video process with very high input impedance  
[NASA-CASE-NPO-10199] c 09 N72-17156

Data multiplexer using tree switching configuration  
[NASA-CASE-NPO-11333] c 08 N72-22162

Integrated circuit including field effect transistor and cermet resistor  
[NASA-CASE-GSC-10835-1] c 09 N72-33205

Radiation hardening of MOS devices by boron --- for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c 76 N74-20329

Stored charge transistor  
[NASA-CASE-NPO-11156-2] c 33 N75-31331

Field effect transistor and method of construction thereof  
[NASA-CASE-MFS-23312-1] c 33 N78-27326

JFET oscillator  
[NASA-CASE-GSC-12555-1] c 33 N80-26601

Method of making V-MOS field effect transistors utilizing a two-step anisotropic etching and ion implantation  
[NASA-CASE-GSC-12515-1] c 33 N81-26360

CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N81-27396

Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N82-11359

Microwave field effect transistor  
[NASA-CASE-GSC-12442-1] c 33 N82-20398

**FIELD EMISSION**  
Method and apparatus for limiting field emission current  
[NASA-CASE-ERC-10015-2] c 10 N72-27246

**FIELD OF VIEW**  
Scanner --- photography from a spin stabilized synchronous satellite  
[NASA-CASE-GSC-12032-2] c 43 N82-13465

**FILAMENT WINDING**  
Tool attachment for spreading loose elements away from work Patent  
[NASA-CASE-XMF-02107] c 15 N71-10809

Method of making a filament-wound container Patent  
[NASA-CASE-XLE-03803-2] c 15 N71-17651

Method of fabricating a twisted composite superconductor  
[NASA-CASE-LEW-11015] c 26 N73-32571

Method of making reinforced composite structure  
[NASA-CASE-LEW-12619-1] c 24 N77-19171

**FILAMENTS**  
Radiant heater having formed filaments Patent  
[NASA-CASE-XLE-00387] c 33 N70-34812

Twisted multifilament superconductor  
[NASA-CASE-LEW-11726-1] c 26 N73-26752

**FILLERS**  
Method for making a heat insulating and ablative structure  
[NASA-CASE-XMS-01108] c 15 N69-24322

Intumescent-ablator coatings using endothermic fillers  
[NASA-CASE-ARC-11043-1] c 24 N78-27180

Polymers compositions and their method of manufacture --- forming filled polymer systems using cryogenics  
[NASA-CASE-NPO-10424-1] c 27 N81-24258

Polyvinyl alcohol battery separator containing inert filler --- alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615

Adjustable high emittance gap filler --- reentry shielding for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339

High performance filleting sealant  
[NASA-CASE-ARC-11409-1] c 27 N82-32490

**FILM COOLING**  
Multislot film cooled pyrolytic graphite rocket nozzle Patent  
[NASA-CASE-XNP-04389] c 28 N71-20942

Curved film cooling admission tube  
[NASA-CASE-LEW-13174-1] c 34 N81-12363

Covering solid, film cooled surfaces with a duplex thermal barrier coating  
[NASA-CASE-LEW-13450-1] c 34 N82-25463

**FILM THICKNESS**  
Chemical vapor deposition reactor --- providing uniform film thickness  
[NASA-CASE-NPO-13650-1] c 25 N79-28253

Dual-beam skin friction interferometer --- portable equipment  
[NASA-CASE-ARC-11354-1] c 36 N81-29415

Deaerator/mixer for liquids  
[NASA-CASE-MSC-18936-1] c 25 N82-22329

**FILMS**  
Apparatus for obtaining isotropic irradiation of a specimen  
[NASA-CASE-MFS-20095] c 24 N72-11595

Method and apparatus for measurement of trap density and energy distribution in dielectric films  
[NASA-CASE-NPO-13443-1] c 76 N76-20994

**FILTERS**  
Filter system for control of outgas contamination in vacuum Patent  
[NASA-CASE-MFS-14711] c 15 N71-26185

Method for removing oxygen impurities from cesium  
[NASA-CASE-XNP-04262-2] c 17 N71-26773

Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c 34 N74-30608

**FILTRATION**  
Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NTSL-10-1] c 25 N82-25335

**FINES**  
Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N82-27087

**FINS**  
Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629

Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c 08 N74-30421

**FIRE EXTINGUISHERS**  
Synthesis of dawsonites  
[NASA-CASE-ARC-113261-1] c 25 N80-31490

Fire extinguishing apparatus having a slidable mass for a penetrator nozzle --- for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137

Fire extinguishant materials  
[NASA-CASE-ARC-11252-1] c 25 N82-12168

**FIRE PREVENTION**  
Hydrogen fire blink detector  
[NASA-CASE-MFS-15063] c 14 N72-25412

Method and apparatus for checking fire detectors  
[NASA-CASE-GSC-11600-1] c 35 N74-21019

**FIREPROOFING**  
Fire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c 18 N71-14014

Flexible fire retardant foam  
[NASA-CASE-ARC-10180-1] c 28 N72-20767



- Intumescent paint containing nitrile rubber  
[NASA-CASE-ARC-10196-1] c 18 N73-13562
- Intumescent composition, foamed product prepared therefrom, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572
- Flexible fire retardant polyisocyanate modified neoprene foam — for thermal protective devices  
[NASA-CASE-ARC-10180-1] c 27 N74-12814
- Non-flammable elastomeric fiber from a fluorinated elastomer and containing a halogenated flame retardant  
[NASA-CASE-MS-C-14331-1] c 27 N76-24405
- Flame retardant spandex type polyurethanes  
[NASA-CASE-MS-C-14331-2] c 27 N78-17213
- Fire protection covering for small diameter missiles  
[NASA-CASE-ARC-11104-1] c 15 N79-26100
- FIRES**
- Combustion products generating and metering device  
[NASA-CASE-GSC-11095-1] c 14 N72-10375
- Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum  
[NASA-CASE-MFS-13130] c 10 N72-17173
- FIRING (IGNITING)**
- Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922
- FITTINGS**
- Quick release connector Patent  
[NASA-CASE-XLA-01141] c 15 N71-13789
- Flared tube strainer  
[NASA-CASE-XLA-05056] c 15 N72-11389
- FIXED WINGS**
- Supersonic aircraft Patent  
[NASA-CASE-XLA-04451] c 02 N71-12243
- FIXTURES**
- Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c 37 N74-32918
- Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c 37 N76-21554
- Heat treat fixture and method of heat treating  
[NASA-CASE-LAR-11821-1] c 26 N80-28492
- FLAME PROBES**
- Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410
- FLAME RETARDANTS**
- Flame retardant spandex type polyurethanes  
[NASA-CASE-MS-C-14331-2] c 27 N78-17213
- Process for spinning flame retardant elastomeric compositions — fabricating synthetic fibers for high oxygen environments  
[NASA-CASE-MS-C-14331-3] c 27 N78-32262
- Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides — flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116
- Crystalline polyimides — reinforcing fibers for high temperature composites and adhesives as well as flame retardation  
[NASA-CASE-LAR-12099-1] c 27 N80-16158
- Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MS-C-14903-3] c 27 N80-24438
- Structural wood panels with improved fire resistance  
[NASA-CASE-ARC-11174-1] c 24 N81-13999
- Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N81-31364
- Heat sealable, flame and abrasion resistant coated fabric — clothing and containers for space exploration  
[NASA-CASE-MS-C-18382-1] c 27 N82-16238
- Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MS-C-18382-2] c 27 N82-24344
- FLAME SPRAYING**
- Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00302] c 15 N71-16077
- Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739
- Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c 37 N74-11301
- FLAME TEMPERATURE**
- Direct heating surface combustor  
[NASA-CASE-LEW-11877-1] c 34 N78-27357
- FLAMES**
- Temperature reducing coating for metals subject to flame exposure Patent  
[NASA-CASE-XLE-00035] c 33 N71-29151
- Modulated hydrogen ion flame detector  
[NASA-CASE-ARC-10322-1] c 35 N76-18403
- FLAMMABILITY**
- Flammability test chamber Patent  
[NASA-CASE-KSC-10126] c 11 N71-24985
- Burn rate testing apparatus  
[NASA-CASE-XMS-09690] c 33 N72-25913
- Compound oxidized styrylphosphine — flame resistant vinyl polymers  
[NASA-CASE-MS-C-14903-2] c 27 N80-10358
- Vitro-violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments  
[NASA-CASE-MS-C-16074-1] c 27 N80-26446
- FLANGES**
- Cassegrainian antenna subreflector flange for suppressing ground noise Patent  
[NASA-CASE-XNP-00683] c 09 N70-35425
- Anti-glare improvement for optical imaging systems Patent  
[NASA-CASE-NPO-10337] c 14 N71-15604
- Flanged major modular assembly jig  
[NASA-CASE-MS-C-18372-1] c 39 N76-31562
- Clamp-mount device  
[NASA-CASE-MFS-25510-1] c 37 N82-11470
- FLAPS (CONTROL SURFACES)**
- Jet aircraft configuration Patent  
[NASA-CASE-XLA-00087] c 02 N70-33332
- Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-36410
- Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110
- Reversed cowl flap inlet thrust augmentor — with adjustable airfoil  
[NASA-CASE-ARC-10754-1] c 07 N75-24736
- FLARED BODIES**
- Flared tube strainer  
[NASA-CASE-XLA-05056] c 15 N72-11389
- FLASH LAMPS**
- Active lamp pulse driver circuit — for use in laser transmitters  
[NASA-CASE-GSC-12566-1] c 36 N82-10390
- FLAT CONDUCTORS**
- Method of making a molded connector Patent  
[NASA-CASE-XMF-03498] c 15 N71-15986
- Method of making shielded flat cable Patent  
[NASA-CASE-MFS-13687] c 09 N71-28691
- Shielded flat cable  
[NASA-CASE-MFS-13687-2] c 09 N72-22198
- Electrical connector  
[NASA-CASE-MFS-20757] c 09 N72-28225
- Method and apparatus for preparing multiconductor cable with flat conductors  
[NASA-CASE-MFS-10946-1] c 31 N79-21226
- Edge coating of flat wires  
[NASA-CASE-XMF-05757-1] c 31 N79-21227
- FLAT PLATES**
- Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988
- Apparatus for making diamonds  
[NASA-CASE-MFS-20698] c 15 N72-20446
- Heat transfer device  
[NASA-CASE-MFS-22938-1] c 34 N76-18374
- Flat-plate heat pipe  
[NASA-CASE-GSC-11998-1] c 34 N77-32413
- Solar engine  
[NASA-CASE-LAR-12148-1] c 44 N82-24640
- FLEXIBILITY**
- Weatherproof helix antenna Patent  
[NASA-CASE-XKS-08485] c 07 N71-19493
- Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937
- Flexible joint for pressurizable garment  
[NASA-CASE-MS-C-11072] c 54 N74-32546
- Nozzle extraction process and handmeter for measuring handle  
[NASA-CASE-LAR-12147-1] c 31 N79-11246
- Safety flywheel — using flexible materials energy storage  
[NASA-CASE-HQN-10888-1] c 44 N79-14527
- FLEXIBLE BODIES**
- Flexible back-up bar Patent  
[NASA-CASE-XMF-00722] c 15 N70-40204
- Deflective rod switch with elastic support and sealing means Patent  
[NASA-CASE-XNP-09808] c 09 N71-12518
- Flexible composite membrane Patent  
[NASA-CASE-XNP-08837] c 18 N71-16210
- Self supporting space vehicle Patent  
[NASA-CASE-XLA-00117] c 31 N71-17680
- Extravehicular tunnel suit system Patent  
[NASA-CASE-MS-C-12243-1] c 05 N71-24728
- Active vibration isolator for flexible bodies Patent  
[NASA-CASE-LAR-10106-1] c 15 N71-27169
- Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747
- Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c 32 N72-25877
- Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c 08 N74-30421
- Internally supported flexible duct joint — device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c 37 N75-19686
- Strong thin membrane structure — solar sails  
[NASA-CASE-NPO-14021-2] c 27 N80-16163
- FLEXIBLE WINGS**
- Aeroflexible structures  
[NASA-CASE-XLA-06095] c 01 N69-39981
- Flexible wing deployment device Patent  
[NASA-CASE-XLA-01220] c 02 N70-41863
- Control for flexible parawing Patent  
[NASA-CASE-XLA-06958] c 02 N71-11038
- FLEXING**
- Two degree inverted flexure  
[NASA-CASE-ARC-10345-1] c 15 N73-12488
- Pressure suit joint analyzer  
[NASA-CASE-ARC-11314-1] c 54 N82-26987
- FLIGHT**
- Traversing probe Patent  
[NASA-CASE-XFR-02007] c 12 N71-24692
- FLIGHT ALTITUDE**
- Altitude measuring system  
[NASA-CASE-ERC-10412-1] c 09 N73-12211
- Terminal guidance system — for guiding aircraft into preselected altitude and/or heading at terminal point  
[NASA-CASE-FRC-10049-1] c 04 N74-13420
- Apparatus for measuring an aircraft's speed and height  
[NASA-CASE-LAR-12275-1] c 35 N79-18296
- Sidelooking laser altimeter for a flight simulator  
[NASA-CASE-ARC-11312-1] c 36 N81-18439
- System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
[NASA-CASE-FRC-11005-1] c 06 N82-16075
- FLIGHT CLOTHING**
- Absorbent product and articles made therefrom  
[NASA-CASE-MS-C-18223-2] c 52 N82-26960
- FLIGHT CONTROL**
- Aircraft instrument Patent  
[NASA-CASE-XLA-00487] c 14 N70-40157
- Two-axis controller Patent  
[NASA-CASE-XFR-04104] c 03 N70-42073
- Mechanically limited, electrically operated hydraulic valve system for aircraft controls Patent  
[NASA-CASE-XAC-00048] c 02 N71-29128
- Numerical computer peripheral interactive device with manual controls  
[NASA-CASE-NPO-11497] c 08 N73-25206
- Solid state controller three axes controller  
[NASA-CASE-MS-C-12394-1] c 08 N74-10942
- G-load measuring and indicator apparatus — for aircraft  
[NASA-CASE-ARC-10806] c 06 N74-27872
- Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10458-1] c 05 N75-12930
- Deploy/release system — model aircraft flight control  
[NASA-CASE-LAR-11575-1] c 02 N76-16014
- Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N81-22048
- Apparatus for damping operator induced oscillations of a controlled system — flight control  
[NASA-CASE-FRC-11041-1] c 33 N82-18493
- FLIGHT CREWS**
- Survival couch Patent  
[NASA-CASE-XLA-00118] c 05 N70-33285
- FLIGHT INSTRUMENTS**
- Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N82-29319
- FLIGHT RECORDERS**
- Event recorder Patent  
[NASA-CASE-XLA-01832] c 14 N71-21006
- FLIGHT SAFETY**
- Aerial capsule emergency separation device Patent  
[NASA-CASE-XLA-00115] c 03 N70-33343
- Apparatus for aiding a pilot in avoiding a midair collision between aircraft  
[NASA-CASE-LAR-10717-1] c 21 N73-30641
- FLIGHT SIMULATION**
- Lunar landing flight research vehicle Patent  
[NASA-CASE-XFR-00929] c 31 N73-34966
- Television simulation for aircraft and space flight Patent  
[NASA-CASE-XFR-03107] c 09 N71-19449
- Separation simulator Patent  
[NASA-CASE-XKS-04631] c 10 N71-23663
- FLIGHT SIMULATORS**
- Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815
- Means for visually indicating flight paths of vehicles between the Earth, Venus, and Mercury Patent  
[NASA-CASE-XNP-00708] c 14 N70-35394
- Wind tunnel test section  
[NASA-CASE-MFS-20509] c 11 N72-17183



Numerical computer peripheral interactive device with manual controls  
[NASA-CASE-NPO-11497] c 08 N73-25206

Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c 09 N74-30597

Vehicle simulator binocular multiplex visual display system  
[NASA-CASE-ARC-10808-1] c 09 N76-24280

Full color hybrid display for aircraft simulators — landing aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083

Chromatically corrected virtual image display — lens design for flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N79-14892

Seat cushion to provide realistic acceleration cues to aircraft simulator pilot  
[NASA-CASE-LAR-12149-2] c 09 N79-31228

Chromatically corrected virtual image visual display — reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185

Sidelooking laser altimeter for a flight simulator  
[NASA-CASE-ARC-11312-1] c 36 N81-19439

Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806

Biocentrifuge system capable of exchanging specimen cages while in operational mode  
[NASA-CASE-MFS-23825-1] c 51 N81-32829

Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212

**FLIGHT TESTS**  
Air frame drag balance Patent  
[NASA-CASE-XLA-00113] c 14 N70-33386

**FLIGHT TRAINING**  
Inflight IFR procedures simulator  
[NASA-CASE-KSC-11218-1] c 09 N82-29331

**FLIGHT VEHICLES**  
Leading edge curvature based on convective heating Patent  
[NASA-CASE-XLA-01486] c 01 N71-23497

Altitude sensing device  
[NASA-CASE-XMS-01994-1] c 14 N72-17326

**FLIP-FLOPS**  
AC logic flip-flop circuits Patent  
[NASA-CASE-XGS-00823] c 10 N71-15910

Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c 10 N71-18772

Flipflop interrogator and bi-polar current driver Patent  
[NASA-CASE-XGS-03058] c 10 N71-19547

**FLOATING**  
Floating baffle to improve efficiency of liquid transfer from tanks  
[NASA-CASE-KSC-10639] c 15 N73-26472

Modification of one man life raft  
[NASA-CASE-LAR-10241-1] c 54 N74-14845

Floating nut retention system  
[NASA-CASE-MS-C-16938-1] c 37 N80-23653

**FLOATS**  
Magnetically centered liquid column float Patent  
[NASA-CASE-XAC-00030] c 14 N70-34820

**FLOTATION**  
Rescue litter flotation assembly Patent  
[NASA-CASE-XMS-04170] c 05 N71-22748

**FLOW CHAMBERS**  
Multi-chamber controllable heat pipe  
[NASA-CASE-ARC-10199] c 34 N78-17337

**FLOW DIRECTION INDICATORS**  
Polarity sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271

Flow angle sensor and read out system Patent  
[NASA-CASE-XLE-04503] c 14 N71-24864

Directional flow sensor  
[NASA-CASE-FRC-11074-1] c 35 N82-11436

**FLOW DISTRIBUTION**  
Full flow with shut off and selective drainage control valve Patent application  
[NASA-CASE-ERC-10208] c 15 N70-10867

Method of obtaining permanent record of surface flow phenomena Patent  
[NASA-CASE-XLA-01353] c 14 N70-41366

Method of recording a gas flow pattern Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815

Dual wavelength scanning Doppler velocimeter — without perturbation of flow fields  
[NASA-CASE-ARC-10637-1] c 35 N75-16783

Controlled separation combustor — airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c 20 N76-14190

Static continuous electrophoresis device  
[NASA-CASE-MFS-25306-1] c 25 N82-11147

Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 34 N82-20465

**FLOW MEASUREMENT**  
Flow test device  
[NASA-CASE-XMS-04917] c 14 N69-24257

Nuclear mass flowmeter  
[NASA-CASE-MFS-20485] c 14 N72-11365

Flow velocity and directional instrument  
[NASA-CASE-LAR-10855-1] c 14 N73-13415

Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c 35 N75-30503

Method for making a hot wire anemometer and product thereof  
[NASA-CASE-ARC-10900-1] c 35 N77-24454

Fluid velocity measuring device  
[NASA-CASE-LAR-11729-1] c 34 N79-12359

Biomedical flow sensor — intravenous procedures  
[NASA-CASE-MS-C-18761-1] c 52 N81-24717

Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402

Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12720-1] c 09 N81-31229

**FLOW REGULATORS**  
Anti-backlash circuit for hydraulic drive system Patent  
[NASA-CASE-XNP-01020] c 03 N71-12260

Fluid flow restrictor Patent  
[NASA-CASE-NPO-10117] c 15 N71-15608

Fluid flow control valve Patent  
[NASA-CASE-XLE-00703] c 15 N71-15967

Gas regulator Patent  
[NASA-CASE-NPO-10298] c 12 N71-17661

Semitoroidal diaphragm cavitating valve Patent  
[NASA-CASE-XNP-09704] c 12 N71-18615

Temperature sensitive flow regulator Patent  
[NASA-CASE-MFS-14259] c 15 N71-19213

Pneumatic amplifier Patent  
[NASA-CASE-MS-C-12121-1] c 15 N71-27147

Gas flow control device  
[NASA-CASE-NPO-11479] c 15 N73-13462

Pressure modulating valve  
[NASA-CASE-MS-C-14905-1] c 37 N77-28487

Automotive gas turbine fuel control  
[NASA-CASE-LEW-12785-1] c 37 N78-24545

Flow diverter valve and flow diversion method  
[NASA-CASE-HQN-00573-1] c 37 N79-33468

Biomedical flow sensor — intravenous procedures  
[NASA-CASE-MS-C-18761-1] c 52 N81-24717

Automatic thermal switch  
[NASA-CASE-GSC-12415-1] c 33 N82-24419

**FLOW STABILITY**  
Continuous detonation reaction engine Patent  
[NASA-CASE-XMF-06926] c 28 N71-22983

Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-MFS-21424-1] c 34 N74-27730

Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12720-1] c 09 N81-31229

**FLOW VELOCITY**  
Method for continuous variation of propellant flow and thrust in propulsive devices Patent  
[NASA-CASE-XLE-00177] c 28 N70-40367

Densitometer Patent  
[NASA-CASE-XLE-00688] c 14 N70-41330

Device for suppressing sound and heat produced by high-velocity exhaust jets Patent  
[NASA-CASE-XMF-01813] c 28 N70-41582

Positive displacement flowmeter Patent  
[NASA-CASE-XMF-02822] c 14 N70-41994

Zeta potential flowmeter Patent  
[NASA-CASE-XNP-06509] c 14 N71-23226

Method for measuring the characteristics of a gas Patent  
[NASA-CASE-XLA-03375] c 16 N71-24074

Laser fluid velocity detector Patent  
[NASA-CASE-XAC-10770-1] c 16 N71-24828

Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546

Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c 15 N71-27432

Flow rate switch  
[NASA-CASE-NPO-10722] c 09 N72-20199

Flow velocity and directional instrument  
[NASA-CASE-LAR-10855-1] c 14 N73-13415

Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-MFS-21424-1] c 34 N74-27730

Wind tunnel flow generation section  
[NASA-CASE-ARC-10710-1] c 09 N75-12969

Combined dual scatter, local oscillator laser Doppler velocimeter  
[NASA-CASE-ARC-10642-1] c 36 N76-14447

System for measuring three fluctuating velocity components in a turbulently flowing fluid  
[NASA-CASE-ARC-10974-1] c 34 N77-27345

Fluid velocity measuring device  
[NASA-CASE-LAR-11729-1] c 34 N79-12359

Pressure letdown method and device for coal conversion systems  
[NASA-CASE-NPO-15100-1] c 28 N81-33306

Wind tunnel supplementary Mach number minimum section insert  
[NASA-CASE-LAR-12532-1] c 09 N82-11088

**FLOW VISUALIZATION**  
Shock-layer radiation measurement  
[NASA-CASE-XAC-02970] c 14 N69-39896

Method of recording a gas flow pattern Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815

**FLOWMETERS**  
Flow test device  
[NASA-CASE-XMS-04917] c 14 N69-24257

Positive displacement flowmeter Patent  
[NASA-CASE-XMF-02822] c 14 N70-41994

Heated element fluid flow sensor Patent  
[NASA-CASE-MS-C-12084-1] c 12 N71-17569

Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-MFS-20386] c 21 N71-19212

Zeta potential flowmeter Patent  
[NASA-CASE-XNP-06509] c 14 N71-23226

Traversing probe Patent  
[NASA-CASE-XI-R-02007] c 12 N71-24692

Laser fluid velocity detector Patent  
[NASA-CASE-XAC-10770-1] c 16 N71-24828

Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546

Nuclear mass flowmeter  
[NASA-CASE-MFS-20485] c 14 N72-11365

Respiratory analysis system and method  
[NASA-CASE-MS-C-13436-1] c 05 N73-32015

Low power electromagnetic flowmeter providing accurate zero set  
[NASA-CASE-ARC-10362-1] c 14 N73-32326

Electromagnetic flow rate meter — for liquid metals  
[NASA-CASE-LEW-10981-1] c 35 N74-21018

Leak detector  
[NASA-CASE-MFS-21761-1] c 35 N75-15931

System for measuring three fluctuating velocity components in a turbulently flowing fluid  
[NASA-CASE-ARC-10974-1] c 34 N77-27345

Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402

**FLUID AMPLIFIERS**  
Fluid jet amplifier  
[NASA-CASE-XLE-03512] c 12 N69-21466

Multivortex valve system Patent  
[NASA-CASE-XMF-04709] c 15 N71-15609

Shear modulated fluid amplifier Patent  
[NASA-CASE-MFS-10412] c 12 N71-17578

Rocket thrust throttling system  
[NASA-CASE-LEW-10374-1] c 28 N73-13773

Fluid pressure amplifier and system  
[NASA-CASE-LAR-10868-1] c 33 N74-11050

Fluid thrust control system — for liquid propellant rocket engines  
[NASA-CASE-XMF-05964-1] c 20 N79-21124

**FLUID DYNAMICS**  
Deaerator/mixer for liquids  
[NASA-CASE-MS-C-18936-1] c 25 N82-22329

**FLUID FILMS**  
Journal bearings — for lubricant films  
[NASA-CASE-LEW-11076-1] c 37 N74-21061

Fluid journal bearings  
[NASA-CASE-LEW-11076-4] c 37 N76-15461

Fluid seal for rotating shafts  
[NASA-CASE-LEW-11676-1] c 37 N76-22541

**FLUID FILTERS**  
Liquid-gas separator for zero gravity environment Patent  
[NASA-CASE-XMS-01492] c 05 N70-41297

High pressure filter Patent  
[NASA-CASE-XNP-00732] c 28 N70-41447

Water separating system Patent  
[NASA-CASE-XMS-13052] c 14 N71-20427

Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c 34 N75-26282

Filter regeneration systems — a system for regenerating a system filter in a fluid flow line  
[NASA-CASE-MS-C-14273-1] c 34 N75-33342

Quick disconnect filter coupling  
[NASA-CASE-MFS-22323-1] c 37 N76-14463

Rapid, quantitative determination of bacteria in water  
[NASA-CASE-GSC-12158-1] c 51 N78-22585

Fluid sample collection and distribution system — qualitative analysis of aqueous samples from several points  
[NASA-CASE-MS-C-16841-1] c 34 N79-24285

Air removal device — life support systems  
[NASA-CASE-XLA-8914-2] c 25 N82-21269

**FLUID FLOW**  
Fluid jet amplifier  
[NASA-CASE-XLE-03512] c 12 N69-21466

Pneumatic system for controlling and actuating pneumatic cyclic devices  
[NASA-CASE-XMS-04843] c 03 N69-21469



Full flow with shut off and selective drainage control valve Patent application  
[NASA-CASE-ERC-10208] c 15 N70-10867

Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859

Pressure regulating system Patent  
[NASA-CASE-XNP-00450] c 15 N70-38603

Antiflutter ball check valve Patent  
[NASA-CASE-XNP-01152] c 15 N70-41811

Inductive liquid level detection system Patent  
[NASA-CASE-XLE-01609] c 14 N71-10500

Multway vortex valve system Patent  
[NASA-CASE-XMF-04709] c 15 N71-15609

Heated element fluid flow sensor Patent  
[NASA-CASE-MS-12084-1] c 12 N71-17569

Multiple orifice throttle valve Patent  
[NASA-CASE-XNP-09698] c 15 N71-18580

Fluid flow meter with comparator reference means Patent  
[NASA-CASE-XGS-01331] c 14 N71-22996

Pressure transducer calibrator Patent  
[NASA-CASE-XNP-01660] c 14 N71-23036

Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191

Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546

Electrohydrodynamic control valve Patent  
[NASA-CASE-NPO-10416] c 12 N71-27332

Fluid jet amplifier Patent  
[NASA-CASE-XLE-09341] c 12 N71-28741

Nuclear mass flowmeter  
[NASA-CASE-MFS-20485] c 14 N72-11365

Flow rate switch  
[NASA-CASE-NPO-10722] c 09 N72-20199

Torsional disconnect unit  
[NASA-CASE-NPO-10704] c 15 N72-20445

Capacitive tank gaging apparatus being independent of liquid distribution  
[NASA-CASE-MFS-21629] c 14 N72-22442

Cryogenic feedthrough  
[NASA-CASE-LAR-10031] c 15 N72-22484

Geysering inhibitor for vertical cryogenic transfer pipe  
[NASA-CASE-KSC-10615] c 15 N73-12486

Pump for delivering heated fluids  
[NASA-CASE-NPO-11417] c 15 N73-24513

Flow control valve -- for high temperature fluids  
[NASA-CASE-NPO-11951-1] c 37 N74-21065

Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-MFS-21424-1] c 34 N74-27730

Internally supported flexible duct joint --- device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c 37 N75-19686

Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c 35 N75-30503

Filter regeneration systems --- a system for regenerating a system filter in a fluid flow line  
[NASA-CASE-MS-14273-1] c 34 N75-33342

Combined dual scatter, local oscillator laser Doppler velocimeter  
[NASA-CASE-ARC-10642-1] c 36 N76-14447

Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MFS-19194-1] c 37 N76-14460

Vortex generator for controlling the dispersion of effluents in a flowing liquid  
[NASA-CASE-LAR-12045-1] c 34 N77-24423

Pseudo-backscatter laser Doppler velocimeter employing antiparallel-reflector in the forward direction  
[NASA-CASE-ARC-10970-1] c 36 N77-25501

Accumulator  
[NASA-CASE-MFS-19287-1] c 34 N77-30399

Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c 35 N78-19465

Flow compensating pressure regulator  
[NASA-CASE-LEW-12718-1] c 34 N78-25351

Fluid valve assembly  
[NASA-CASE-MS-12731-1] c 37 N78-25426

Positive isolation disconnect  
[NASA-CASE-MS-16043-1] c 37 N79-11402

Fluid velocity measuring device  
[NASA-CASE-LAR-11729-1] c 34 N79-12359

Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N81-19440

Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470

**FLUID INJECTION**

Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c 28 N70-33375

Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01988] c 27 N71-15634

Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c 31 N71-15647

Process of forming particles in a cryogenic path Patent  
[NASA-CASE-NPO-10250] c 23 N71-16212

Apparatus for purging systems handling toxic, corrosive, noxious and other fluids Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089

Tertiary flow injection thrust vectoring system Patent  
[NASA-CASE-MFS-20831] c 28 N71-29153

Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c 52 N74-22771

**FLUID JETS**

Propeller blade loading control Patent  
[NASA-CASE-XAC-00139] c 02 N70-34856

**FLUID LOGIC**

Logic AND gate for fluid circuits Patent  
[NASA-CASE-XLA-07391] c 12 N71-17579

**FLUID MECHANICS**

Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573

Parallel-plate viscometer with double diaphragm suspension  
[NASA-CASE-NPO-11387] c 14 N73-14429

Modified face seal for positive film stiffness  
[NASA-CASE-LEW-12989-1] c 37 N82-12442

**FLUID POWER**

Fluid power transmission Patent  
[NASA-CASE-XMS-01445] c 12 N71-16031

Fluid power transmitting gas bearing Patent  
[NASA-CASE-ERC-10097] c 15 N71-28465

**FLUID PRESSURE**

Flow compensating pressure regulator  
[NASA-CASE-LEW-12718-1] c 34 N78-25351

Self-stabilizing radial face seal  
[NASA-CASE-LEW-12991-1] c 37 N81-24442

**FLUID ROTOR GYROSCOPES**

Piezoelectric pump Patent  
[NASA-CASE-XNP-05429] c 26 N71-21824

**FLUID SWITCHING ELEMENTS**

Booster tank system Patent  
[NASA-CASE-MS-12390] c 27 N71-29155

**FLUID TRANSMISSION LINES**

Low heat leak connector for cryogenic system  
[NASA-CASE-XLE-02367-1] c 31 N79-21225

**FLUIDIC CIRCUITS**

Technique of duplicating fragile core  
[NASA-CASE-XLA-07829] c 15 N72-16329

Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c 35 N75-30503

**FLUIDICS**

Fluidic-thermochromic display device Patent  
[NASA-CASE-ERC-10031] c 12 N71-18603

Plasma fluidic hybrid display Patent  
[NASA-CASE-ERC-10100] c 09 N71-33519

Fluidic proportional thruster system  
[NASA-CASE-ARC-10106-1] c 28 N72-22769

Fluid pressure amplifier and system  
[NASA-CASE-LAR-10868-1] c 33 N74-11050

Fluid valve assembly  
[NASA-CASE-MS-12731-1] c 37 N78-25426

**FLUIDIZED BED PROCESSORS**

Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154

Fluidized bed coal combustion reactor  
[NASA-CASE-NPO-14273-1] c 25 N82-11144

Solar heated fluidized bed gasification system  
[NASA-CASE-NPO-15071-1] c 44 N82-16475

Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401

**FLUIDS**

Automated fluid chemical analyzer Patent  
[NASA-CASE-XNP-09451] c 06 N71-26754

Bacteria detection instrument and method  
[NASA-CASE-GSC-11533-1] c 14 N73-13435

Low outgassing polydimethylsiloxane material and preparation thereof  
[NASA-CASE-GSC-11358-1] c 06 N73-26100

Fluid mass sensor for a zero gravity environment  
[NASA-CASE-MS-14653-1] c 35 N77-19385

**FLUORESCENCE**

Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c 14 N70-41676

Internal work light Patent  
[NASA-CASE-XKS-05932] c 09 N71-26787

Chromato-fluorographic drug detector --- device for detecting and recording fluorescent properties of materials  
[NASA-CASE-ARC-10633-1] c 25 N74-26947

Fluorescence detector for monitoring atmospheric pollutants  
[NASA-CASE-NPO-13231-1] c 45 N75-27585

Fluorescent radiation converter  
[NASA-CASE-GSC-12528-1] c 74 N81-24900

**FLUORIDES**

Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710

Corrosion resistant beryllium Patent  
[NASA-CASE-LEW-10327] c 17 N71-33408

Perfluoro polyether acyl fluorides  
[NASA-CASE-NPO-10765] c 06 N72-20121

**FLUORINATION**

Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-2] c 06 N72-27151

Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098

**FLUORINE**

Reaction of fluorine with polyperfluoropolyenes  
[NASA-CASE-NPO-10862] c 06 N72-22107

Process for the preparation of fluorine containing crosslinked elastomeric polytriazine and product so produced  
[NASA-CASE-ARC-11248-1] c 27 N81-17259

**FLUORINE COMPOUNDS**

Fluorine-containing polyformals  
[NASA-CASE-XMF-06900-1] c 27 N79-21191

Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MS-18430-1] c 37 N82-24491

**FLUORO COMPOUNDS**

New polymers of perfluorobutadiene and method of manufacture Patent application  
[NASA-CASE-NPO-10863] c 06 N70-11251

Method of polymerizing perfluorobutadiene Patent application  
[NASA-CASE-NPO-10447] c 06 N70-11252

Fluorohydroxy ethers  
[NASA-CASE-MFS-10507] c 06 N73-30101

Highly fluorinated polymers  
[NASA-CASE-MFS-11492] c 06 N73-30102

Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076

Utilization of oxygen difluoride for syntheses of fluoropolymers  
[NASA-CASE-NPO-12061-1] c 27 N76-16228

The 1,1,1-trifluoro-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312

**FLUOROCARBONS**

Electrically conductive fluorocarbon polymer  
[NASA-CASE-XLE-06774-2] c 06 N72-25150

**FLUOROPOLYMERS**

Perfluoroalkyl polytriazines containing pendent iododifluoromethyl groups  
[NASA-CASE-ARC-11241-1] c 25 N81-14016

Texturing polymer surfaces by transfer casting --- cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440

Surface texturing of fluoropolymers  
[NASA-CASE-LEW-13028-1] c 27 N82-33521

**FLUTTER**

Antiflutter ball check valve Patent  
[NASA-CASE-XNP-01152] c 15 N70-41811

Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004

Decoupler pylon wing/store flutter suppressor  
[NASA-CASE-LAR-12468-1] c 08 N82-32373

**FLUX (RATE)**

Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c 14 N71-27325

**FLUX DENSITY**

Particle beam measurement apparatus using beam kinetic energy to change the heat sensitive resistance of the detection probe Patent  
[NASA-CASE-XLE-00243] c 14 N70-38602

**FLUXES**

Solder flux which leaves corrosion-resistant coating Patent  
[NASA-CASE-XNP-03459-2] c 18 N71-15688

Soldering with solder flux which leaves corrosion resistant coating Patent  
[NASA-CASE-XNP-03459] c 15 N71-21078

**FLYWHEELS**

Energy storage apparatus  
[NASA-CASE-GSC-12030-1] c 44 N78-24608

Rotatable mass for a flywheel  
[NASA-CASE-MFS-23051-1] c 37 N79-10422

Safety flywheel --- using flexible materials energy storage  
[NASA-CASE-HQN-10888-1] c 44 N79-14527

Method of manufacture of bonded fiber flywheel --- fiberglass-epoxy  
[NASA-CASE-MFS-23674-1] c 24 N81-29163

**FOAMS**

Foam generator Patent  
[NASA-CASE-XLA-00838] c 03 N70-38778

Method for continuous variation of propellant flow and thrust in propulsive devices Patent  
[NASA-CASE-XLE-00177] c 28 N70-40387



- Filament wound container Patent  
[NASA-CASE-XLE-03803] c 15 N71-23816
- Novel polycarboxylic prepolymeric materials and polymers thereof Patent  
[NASA-CASE-NPO-10596] c 06 N71-25929
- Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-26155
- Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779
- Thickness measuring and injection device Patent  
[NASA-CASE-MFS-20261] c 14 N71-27005
- Method of making foamed materials in zero gravity  
[NASA-CASE-XMF-03902] c 15 N72-11387
- Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812
- Intumescent composition, foamed product prepared therewith and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037
- Polymeric foams from cross-linkable poly-n-arylenebenzimidazoles  
[NASA-CASE-ARC-11008-1] c 27 N78-31232
- Ambient cure polyimide foams — thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215
- Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides — flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116

## FOCI

- Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 32 N82-10287
- High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N82-24973

## FOCUSING

- X-ray reflection collimator adapted to focus X-radiation directly on a detector Patent  
[NASA-CASE-XHQ-04106] c 14 N70-40240
- Focussing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618
- Petzval type objective including field shaping lens Patent  
[NASA-CASE-GSC-10700] c 23 N71-30027
- Absolute focus lock for microscopes  
[NASA-CASE-LAR-10184] c 14 N72-22445
- Electron beam controller — using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c 33 N74-10195
- Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014
- Multiplate focusing collimator — for scanning small near radiation sources  
[NASA-CASE-MFS-20932-1] c 35 N75-19616
- RF beam center location method and apparatus for power transmission system  
[NASA-CASE-NPO-13821-1] c 44 N78-28594
- Gyrotron transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N81-16384
- Dual aperture multispectral Schmidt objective  
[NASA-CASE-GSC-12756-1] c 74 N82-30073
- Scanning afocal laser velocimeter projection lens system  
[NASA-CASE-LAR-12328-1] c 36 N82-32712

## FOG

- Anti-fog composition — for prevention of fogging on surfaces such as space helmet visors and windshields  
[NASA-CASE-MSC-13530-2] c 23 N75-14834
- Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212

## FOILS (MATERIALS)

- Foil seal  
[NASA-CASE-XLE-05130] c 15 N69-21362
- Method of making an insulation foil  
[NASA-CASE-LEW-11484-1] c 24 N75-33181
- Partial interlaminar separation system for composites  
[NASA-CASE-LAR-12065-1] c 24 N81-14000
- Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235

## FOLDING

- Folding apparatus Patent  
[NASA-CASE-XLA-00137] c 15 N70-33180

## FOLDING STRUCTURES

- Space and atmospheric reentry vehicle Patent  
[NASA-CASE-XGS-00260] c 31 N70-37924
- Collapsible loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c 07 N70-40202
- Folding boom assembly Patent  
[NASA-CASE-XGS-00938] c 32 N70-41367
- Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579
- Foldable solar concentrator Patent  
[NASA-CASE-XLA-04822] c 03 N70-41580

- Wing deployment method and apparatus Patent  
[NASA-CASE-XMS-00907] c 02 N70-41630
- Variable sweep aircraft Patent  
[NASA-CASE-XLA-03659] c 02 N71-11041
- Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611
- Foldable construction block  
[NASA-CASE-MSC-12233-1] c 15 N72-25454
- Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040
- Collapsible corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539
- Foldable beam  
[NASA-CASE-LAR-12077-1] c 31 N81-25259
- Telescoping columns — parabolic antenna support  
[NASA-CASE-LAR-12195-1] c 31 N81-27324

## FOOD

- Bacteria detection instrument and method  
[NASA-CASE-GSC-11533-1] c 14 N73-13435

## FORCE

- Ferrofluidic solenoid  
[NASA-CASE-NPO-11738-1] c 09 N73-30185

## FORCE DISTRIBUTION

- Device for handling heavy loads  
[NASA-CASE-XNP-04969] c 11 N69-27466
- Two force component measuring device Patent  
[NASA-CASE-XAC-04886-1] c 14 N71-20439
- Tensile strength testing device Patent  
[NASA-CASE-XNP-05634] c 15 N71-24834
- Impact monitoring apparatus  
[NASA-CASE-MSC-15626-1] c 14 N72-25411
- Variable direction force coupler  
[NASA-CASE-MFS-20317] c 15 N73-13463
- Subminiature insertable force transducer — including a strain gage to measure forces in muscles  
[NASA-CASE-NPO-13423-1] c 33 N75-31329

## FORCED VIBRATION

- Seismic vibration source  
[NASA-CASE-NPO-14112-1] c 46 N79-22679

## FOREBODIES

- Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968

## FORMALDEHYDE

- An improved synthesis of 2,4,8,10-tetroxaspiro (5) undecane  
[NASA-CASE-ARC-11243-2] c 23 N80-31472
- Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174

## FORMAT

- Digital data reformatter/deserializer  
[NASA-CASE-NPO-13676-1] c 60 N79-20751

## FORMATES

- Fluorine containing polyurethane  
[NASA-CASE-MFS-10509] c 06 N73-30103

## FORMING TECHNIQUES

- Wire and forming apparatus Patent  
[NASA-CASE-XLE-00023] c 15 N70-33330
- Method for forming plastic materials Patent  
[NASA-CASE-XMS-05518] c 15 N71-17803
- Method of making tubes Patent  
[NASA-CASE-XGS-04175] c 15 N71-18579
- Magnetomotive metal working device Patent  
[NASA-CASE-XMF-03793] c 15 N71-24833
- Apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917-2] c 15 N71-24836
- Method of forming shapes from planar sheets of thermosetting materials  
[NASA-CASE-NPO-11036] c 15 N72-24522
- Method of heat treating a formed powder product material  
[NASA-CASE-LEW-10805-3] c 26 N74-10521
- Molding apparatus — for thermosetting plastic compositions  
[NASA-CASE-LAR-10489-2] c 31 N74-32920
- Process for making sheets with parallel pores of uniform size  
[NASA-CASE-GSC-10984-1] c 37 N75-26371
- Drilled ball bearing with a one piece anti-tipping cage assembly  
[NASA-CASE-LEW-11925-1] c 37 N75-31446
- Apparatus for forming dished ion thruster grids  
[NASA-CASE-LEW-11694-2] c 37 N76-14461
- Acoustic energy shaping  
[NASA-CASE-NPO-13802-1] c 71 N78-10837
- Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436
- Method of producing complex aluminum alloy parts of high temper, and products thereof  
[NASA-CASE-MSC-19693-1] c 26 N78-24333
- Solar cell with improved N-region contact and method of forming the same  
[NASA-CASE-NPO-14205-1] c 44 N79-31752
- Method and apparatus for producing concentric hollow spheres — inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319

- Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MSC-18430-1] c 37 N82-24491
- Sphere forming method and apparatus  
[NASA-CASE-NPO-15070-1] c 31 N82-33567

## FOUNDATIONS

- Expandable support means  
[NASA-CASE-NPO-11059] c 15 N72-17454
- Adjustable securing base  
[NASA-CASE-MSC-19666-1] c 37 N78-17383

## FOURIER TRANSFORMATION

- Continuous Fourier transform method and apparatus — for the analysis of simultaneous analog signal components  
[NASA-CASE-ARC-10466-1] c 60 N75-13539

## FRACTIONATION

- Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c 15 N71-27184
- Electrophoretic fractional elution apparatus employing a rotational seal fraction collector  
[NASA-CASE-MFS-23284-1] c 37 N80-14397

## FRACTURE MECHANICS

- Apparatus for positioning and loading a test specimen Patent  
[NASA-CASE-XLE-01300] c 15 N70-41993

## FRACTURE STRENGTH

- Process for making a high toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-2] c 26 N79-22271
- High toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-3] c 26 N80-32484
- Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235

## FRAMES

- Articulated multiple couch assembly Patent  
[NASA-CASE-MSC-11253] c 05 N71-12343
- Soft frame adjustable eyeglasses Patent  
[NASA-CASE-XMS-06064] c 05 N71-23096
- Expandable space frames  
[NASA-CASE-ERC-10365-1] c 31 N73-32749
- Laser measuring system for incremental assemblies — measuring wire-wrapped frame assemblies in spark chambers  
[NASA-CASE-GSC-12321-1] c 36 N82-16396
- Inorganic spark chamber frame and method of making the same  
[NASA-CASE-GSC-12354-1] c 35 N82-24471

## FRAMING CAMERAS

- High speed photo-optical time recording  
[NASA-CASE-KSC-10294] c 14 N72-18411

## FREE FLIGHT TEST APPARATUS

- Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c 11 N70-41677
- Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604
- Test unit free-flight suspension system Patent  
[NASA-CASE-XLA-00939] c 11 N71-15926

## FREE WING AIRCRAFT

- Free wing assembly for an aircraft  
[NASA-CASE-FRC-10092-1] c 05 N79-12061

## FREEZE DRYING

- Modification of the physical properties of freeze-dried rice  
[NASA-CASE-MSC-13540-1] c 05 N72-33096

## FREEZING

- System for and method of freezing biological tissue  
[NASA-CASE-GSC-12173-1] c 51 N79-10694
- Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

## FREON

- Solar energy power system — using Freon  
[NASA-CASE-MFS-21628-1] c 44 N75-32581

## FREQUENCIES

- Controlled oscillator system with a time dependent output frequency  
[NASA-CASE-NPO-11962-1] c 33 N74-10194
- High efficiency multifrequency feed  
[NASA-CASE-GSC-11909] c 32 N74-20863

## FREQUENCY ANALYZERS

- Digital frequency discriminator Patent  
[NASA-CASE-MFS-14322] c 08 N71-18692
- Broadband frequency discriminator Patent  
[NASA-CASE-NPO-10096] c 07 N71-24583
- Audio frequency marker system  
[NASA-CASE-NPO-11147] c 14 N72-27408
- Continuous Fourier transform method and apparatus — for the analysis of simultaneous analog signal components  
[NASA-CASE-ARC-10466-1] c 60 N75-13539
- Frequency discriminator and phase detector circuit  
[NASA-CASE-NPO-11515-1] c 33 N77-13315
- Frequency tracked pulse technique for ultrasonic analysis  
[NASA-CASE-LAR-12697-1] c 32 N80-26571



## FREQUENCY CONTROL

- Bus voltage compensation circuit for controlling direct current motor  
[NASA-CASE-XMS-04215-1] c 09 N69-39987
- Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00458] c 09 N70-38604
- Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00131] c 09 N70-38995
- Automatic frequency discriminators and control for a phase-lock loop providing frequency preset capabilities Patent  
[NASA-CASE-XMF-08665] c 10 N71-19487
- Linear accelerator frequency control system Patent  
[NASA-CASE-XGS-05441] c 10 N71-22962
- Tuning arrangement for an electron discharge device or the like Patent  
[NASA-CASE-XNP-09771] c 09 N71-24841
- Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c 32 N74-11000
- Automatic frequency control for FM transmitter  
[NASA-CASE-MFS-21540-1] c 32 N74-19790
- Acoustically controlled distributed feedback laser  
[NASA-CASE-NPO-13175-1] c 36 N75-31427
- Reflex feed system for dual frequency antenna with frequency cutoff means  
[NASA-CASE-NPO-14022-1] c 32 N78-31321
- Cam-operated pitch-change apparatus  
[NASA-CASE-LEW-13050-1] c 07 N79-14095
- Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349
- High stability buffered phase comparator  
[NASA-CASE-GSC-12645-1] c 33 N81-31482
- Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N82-26652
- FREQUENCY CONVERTERS**
- Frequency to analog converter Patent  
[NASA-CASE-XNP-07040] c 08 N71-12500
- Static inverters which sum a plurality of waves Patent  
[NASA-CASE-XMF-00663] c 08 N71-18752
- Voltage to frequency converter Patent  
[NASA-CASE-GSC-10022-1] c 10 N71-25882
- Family of frequency to amplitude converters  
[NASA-CASE-MSC-12395] c 09 N72-25257
- Variable frequency inverter for ac induction motors with torque, speed and braking control  
[NASA-CASE-MFS-22088-1] c 33 N75-15874
- FREQUENCY DISCRIMINATORS**
- PN lock indicator for dithered PN code tracking loop  
[NASA-CASE-NPO-14435-1] c 33 N81-33405
- FREQUENCY DISTRIBUTION**
- Antenna system using parasitic elements and two driven elements at 90 deg angle fed 180 deg out of phase Patent  
[NASA-CASE-XLA-00414] c 07 N70-38200
- Variable frequency oscillator with temperature compensation Patent  
[NASA-CASE-XNP-03916] c 09 N71-28810
- Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323
- FREQUENCY DIVIDERS**
- Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c 10 N73-26229
- Technique for extending the frequency range of digital dividers  
[NASA-CASE-LAR-10730-1] c 33 N74-10223
- Symmetrical odd-modulus frequency divider  
[NASA-CASE-NPO-13426-1] c 33 N75-31330
- Electronic analog divider  
[NASA-CASE-LEW-11881-1] c 33 N77-17354
- Unequal split microwave power divider  
[NASA-CASE-LAR-12889-1] c 33 N81-31483
- FREQUENCY DIVISION MULTIPLEXING**
- Satellite communication system and method Patent  
[NASA-CASE-GSC-10118-1] c 07 N71-24621
- Frequency division multiplex technique  
[NASA-CASE-KSC-10521] c 07 N73-20176
- FREQUENCY MEASUREMENT**
- Measurement system  
[NASA-CASE-MFS-20658-1] c 14 N73-30386
- Frequency measurement by coincidence detection with standard frequency  
[NASA-CASE-MSC-14649-1] c 33 N76-16331
- Time domain phase measuring apparatus  
[NASA-CASE-GSC-12228-1] c 33 N79-10338
- FREQUENCY MODULATION**
- Accelerometer with FM output Patent  
[NASA-CASE-XLA-00492] c 14 N70-34799
- Means for generating a sync signal in an FM communication system Patent  
[NASA-CASE-XNP-10830] c 07 N71-11281
- Bi-camera demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c 07 N71-11298
- Optical tracker having overlapping reticles on parallel axes Patent  
[NASA-CASE-XGS-05715] c 23 N71-16100

- Atomic hydrogen maser with bulb temperature control to remove wall shift in maser output frequency  
[NASA-CASE-HQN-10654-1] c 16 N73-13489
- Junction range finder  
[NASA-CASE-KSC-10108] c 14 N73-25461
- Automatic frequency control for FM transmitter  
[NASA-CASE-MFS-21540-1] c 32 N74-19790
- Symmetrical odd-modulus frequency divider  
[NASA-CASE-NPO-13426-1] c 33 N75-31330
- Frequency modulated oscillator  
[NASA-CASE-MFS-23181-1] c 33 N77-17351
- FM/CW radar system  
[NASA-CASE-MFS-22234-1] c 32 N79-10264
- Thickness measurement system  
[NASA-CASE-MFS-23721-1] c 31 N79-28370
- Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510
- Adaptive control system for line-commutated inverters  
[NASA-CASE-MFS-25209-1] c 33 N81-31480
- FREQUENCY MULTIPLIERS**
- Multiple varactor frequency doubler Patent  
[NASA-CASE-XMF-04958-1] c 10 N71-26414
- Open loop digital frequency multiplier  
[NASA-CASE-MSC-12709-1] c 33 N77-24375
- FREQUENCY RANGES**
- Variable time constant smoothing circuit Patent  
[NASA-CASE-XGS-01983] c 10 N70-41964
- Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266
- Technique for extending the frequency range of digital dividers  
[NASA-CASE-LAR-10730-1] c 33 N74-10223
- Multichannel logarithmic RF level detector  
[NASA-CASE-LAR-11021-1] c 32 N76-14321
- Multiple rate digital command detection system with range clean-up capability  
[NASA-CASE-NPO-13753-1] c 32 N77-20289
- Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-1] c 32 N79-19195
- FREQUENCY SCANNING**
- Automatic communication signal monitoring system  
[NASA-CASE-NPO-13941-1] c 32 N79-10262
- Frequency-scanning particle size spectrometer  
[NASA-CASE-NPO-13606-2] c 35 N80-18364
- Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341
- FREQUENCY SHIFT**
- Doppler frequency spread correction device for multiplex transmissions  
[NASA-CASE-XGS-02749] c 07 N69-39978
- Serrodyne frequency converter re-entrant amplifier system Patent  
[NASA-CASE-XGS-01022] c 07 N71-16088
- Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c 07 N71-20814
- Laser fluid velocity detector Patent  
[NASA-CASE-XAC-10770-1] c 16 N71-24828
- Laser Doppler velocity simulator — to induce frequency shift  
[NASA-CASE-LAR-12176-1] c 36 N80-16321
- FREQUENCY SHIFT KEYING**
- Frequency shift keyed demodulator Patent  
[NASA-CASE-XGS-02889] c 07 N71-11282
- Frequency shift keying apparatus Patent  
[NASA-CASE-XGS-01537] c 07 N71-23405
- FREQUENCY STABILITY**
- Method and apparatus for stabilizing a gaseous optical maser Patent  
[NASA-CASE-XGS-03644] c 16 N71-18614
- Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c 10 N71-26331
- Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N82-26652
- FREQUENCY STANDARDS**
- Method of resolving clock synchronization error and means therefor Patent  
[NASA-CASE-XNP-08875] c 10 N71-23099
- Atomic standard with variable storage volume  
[NASA-CASE-GSC-11895-1] c 35 N76-15436
- Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323
- External bulb variable volume maser  
[NASA-CASE-GSC-12334-1] c 36 N79-14362
- Precise RF timing signal distribution to remote stations — fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186

## FREQUENCY SYNCHRONIZATION

- Pseudonoise (PN) synchronization of data system with derivation of clock frequency from received signal for clocking receiver PN generator  
[NASA-CASE-XNP-03623] c 09 N73-28084
- Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323
- System for synchronizing synthesizers of communication systems  
[NASA-CASE-GSC-12148-1] c 32 N79-20296
- FREQUENCY SYNTHESIZERS**
- Digitally controlled frequency synthesizer Patent  
[NASA-CASE-XGS-02317] c 09 N71-23525
- System for synchronizing synthesizers of communication systems  
[NASA-CASE-GSC-12148-1] c 32 N79-20296
- Method for shaping and aiming narrow beams — sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443
- FRICTION**
- Missile rolling tail brake torque system — simulating bearing friction on canard controlled missiles  
[NASA-CASE-LAR-12751-1] c 37 N82-26675
- Refractory coatings  
[NASA-CASE-LEW-13169-2] c 26 N82-30371
- FRICTION FACTOR**
- Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984
- FRICTION MEASUREMENT**
- Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c 14 N71-22995
- Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c 35 N76-31489
- FRICTION REDUCTION**
- Low friction magnetic recording tape Patent  
[NASA-CASE-XGS-00373] c 23 N71-15978
- Production of hollow components for rolling element bearings by diffusion welding  
[NASA-CASE-LEW-11026-1] c 15 N73-33383
- FRICTIONLESS ENVIRONMENTS**
- Air bearing Patent  
[NASA-CASE-XMF-01887] c 15 N71-10617
- Air cushion lift pad Patent  
[NASA-CASE-MFS-14685] c 31 N71-15689
- Method and apparatus of simulating zero gravity conditions Patent  
[NASA-CASE-MFS-12750] c 27 N71-16223
- FROST**
- Insulating structure Patent  
[NASA-CASE-XMF-00341] c 15 N70-33323
- Device for determining frost depth and density  
[NASA-CASE-MFS-25754-1] c 31 N82-26503
- FUEL CELL POWER PLANTS**
- Reactant pressure differential control for fuel cell gases  
[NASA-CASE-MSC-20127-1] c 44 N82-32843
- FUEL CELLS**
- Method of making membranes  
[NASA-CASE-NXP-04264] c 03 N69-21337
- Combined electrolysis device and fuel cell and method of operation Patent  
[NASA-CASE-XLE-01645] c 03 N71-20904
- Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022
- Ion-exchange membrane with platinum electrode assembly Patent  
[NASA-CASE-XMS-02063] c 03 N71-29044
- Reconstituted asbestos matrix — for use in fuel or electrolysis cells  
[NASA-CASE-MSC-12568-1] c 24 N76-14204
- Dual membrane hollow fiber fuel cell and method of operating same  
[NASA-CASE-NPO-13732-1] c 44 N79-10513
- FUEL COMBUSTION**
- Fuel combustor  
[NASA-CASE-LEW-12137-1] c 25 N78-10224
- FUEL CONTROL**
- Attitude and propellant flow control system and method Patent  
[NASA-CASE-XMF-00185] c 21 N70-34539
- Flexible ring slosh damping baffle Patent  
[NASA-CASE-LAR-10317-1] c 32 N71-16103
- Buoyant anti-slosh system Patent  
[NASA-CASE-XLA-04605] c 32 N71-16106
- Control valve and co-axial variable injector Patent  
[NASA-CASE-XNP-09702] c 15 N71-17654
- Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c 15 N71-27432
- Gas turbine engine fuel control  
[NASA-CASE-LEW-11187-1] c 28 N73-18793
- Automotive gas turbine fuel control  
[NASA-CASE-LEW-12785-1] c 37 N78-24545



Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483

**FUEL FLOW**

System for preconditioning a combustible vapor  
[NASA-CASE-NPO-12072] c 28 N72-22772

**FUEL FLOW REGULATORS**

Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c 15 N70-22192  
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[NASA-CASE-XGS-08729] c 28 N71-14044  
Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12830-1] c 07 N77-23106

**FUEL GAGES**

Response analyzers for sensors Patent  
[NASA-CASE-MFS-11204] c 14 N71-29134

**FUEL INJECTION**

Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535  
Rocket engine injector Patent  
[NASA-CASE-XLE-00111] c 28 N70-38199  
Injector assembly for liquid fueled rocket engines Patent  
[NASA-CASE-XMF-00968] c 28 N71-15660  
Injection head for delivering liquid fuel and oxidizers  
[NASA-CASE-NPO-10046] c 28 N72-17843  
Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c 15 N73-27406  
Supercritical fuel injection system  
[NASA-CASE-LEW-12990-1] c 07 N81-29129  
Low thrust monopropellant engine  
[NASA-CASE-GSC-12194-2] c 20 N82-18314

**FUEL OILS**

Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12830-1] c 07 N77-23106

**FUEL PUMPS**

Fuel injection pump for internal combustion engines Patent  
[NASA-CASE-MSC-12139-1] c 28 N71-14058

**FUEL SYSTEMS**

Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781  
System for preconditioning a combustible vapor  
[NASA-CASE-NPO-12072] c 28 N72-22772  
Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502  
Fuel combustor  
[NASA-CASE-LEW-12137-1] c 25 N78-10224  
Fuel delivery system including heat exchanger means  
[NASA-CASE-LEW-12793-1] c 37 N79-11403  
Supercritical fuel injection system  
[NASA-CASE-LEW-12990-1] c 07 N81-29129

**FUEL TANK PRESSURIZATION**

Venting vapor apparatus Patent  
[NASA-CASE-XLE-00288] c 15 N70-34247  
Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042  
Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c 27 N71-28929

**FUEL TANKS**

Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988  
Flexible ring slosh damping baffle Patent  
[NASA-CASE-LAR-10317-1] c 32 N71-16103  
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[NASA-CASE-XLA-04605] c 32 N71-16106  
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[NASA-CASE-XLA-05541] c 12 N71-26387  
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[NASA-CASE-XMF-03968] c 14 N71-27186  
High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523

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Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535  
Semitoroidal diaphragm cavitating valve Patent  
[NASA-CASE-XNP-09704] c 12 N71-18615  
Filler valve Patent  
[NASA-CASE-XNP-01747] c 15 N71-23024  
Combination automatic-starting electrical plasma torch and gas shutoff valve — for satellite attitude control  
[NASA-CASE-XLE-10717] c 37 N75-29426

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Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103

**FUNCTION GENERATORS**

Line following servosystem Patent  
[NASA-CASE-XAC-00001] c 15 N71-28952  
Digital quasi-exponential function generator  
[NASA-CASE-NPO-11130] c 08 N72-20176

Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-10503-1] c 09 N72-21248

Function generator for synthesizing complex vibration mode patterns  
[NASA-CASE-LAR-10310-1] c 10 N73-20253

Dervation of a tangent function using an integrated circuit four-quadrant multiplier  
[NASA-CASE-MSC-13907-1] c 10 N73-26230

**FURLABLE ANTENNAS**

Unfurlable structure including coiled strips thrust launched upon tension release Patent  
[NASA-CASE-HQN-00937] c 07 N71-28979  
Singly-curved reflector for use in high-gain antennas  
[NASA-CASE-NPO-11361] c 07 N72-32169  
Furlable antenna — antenna design  
[NASA-CASE-NPO-13553-1] c 33 N76-32457

**FURNACES**

High-speed infrared furnace  
[NASA-CASE-XLE-10466] c 17 N69-25147  
Black-body furnace Patent  
[NASA-CASE-XLE-01399] c 33 N71-15625  
Induction furnace with perforated tungsten foil shielding Patent  
[NASA-CASE-XLE-04026] c 14 N71-23267  
High temperature furnace for melting materials in space  
[NASA-CASE-MFS-20710] c 11 N72-23215  
High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523  
Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 76 N81-30012  
Exothermic furnace module  
[NASA-CASE-MFS-25707-1] c 35 N82-26631

**FUSELAGES**

Adapter for mounting microphone flush with the external surface of the skin of a pressurized aircraft  
[NASA-CASE-FRC-11072-1] c 35 N82-24474  
Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384

**FUSION (MELTING)**

Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735  
Method for fiberizing ceramic materials Patent  
[NASA-CASE-XNP-00597] c 18 N71-23088  
Induction heating gun  
[NASA-CASE-LAR-12540-2] c 27 N82-24345  
One-step dual purpose joining technique  
[NASA-CASE-LAR-12595-1] c 33 N82-26571

**FUSION WELDING**

Method for producing a solar cell having an integral protective covering  
[NASA-CASE-XGS-04531] c 03 N69-24267  
Weld control system using thermocouple wire Patent  
[NASA-CASE-MFS-06074] c 15 N71-20393  
Butt welder for fine gauge tungsten/rhenium thermocouple wire  
[NASA-CASE-LAR-10103-1] c 15 N73-14468  
Diffusion welding in air — solid state welding of butt joint by fusion welding, surface cleaning, and heating  
[NASA-CASE-LEW-11387-1] c 37 N74-18128

**G****GADOLINIUM**

Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607  
Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292

**GALLIUM**

Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790

**GALLIUM ARSENIDES**

GaAs solar detector using manganese as a doping agent Patent  
[NASA-CASE-XNP-01328] c 26 N71-18064  
Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027  
Method of changing the conductivity of vapor deposited gallium arsenide by the introduction of water into the vapor deposition atmosphere Patent  
[NASA-CASE-XNP-01961] c 26 N71-29156  
Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c 25 N75-26043  
Vapor deposition apparatus — semiconductors and gallium arsenides  
[NASA-CASE-HQN-10462] c 25 N75-29192  
Microwave field effect transistor  
[NASA-CASE-GSC-12442-1] c 33 N82-20398

**GALVANIC SKIN RESPONSE**

Method and apparatus for attaching physiological monitoring electrodes Patent  
[NASA-CASE-XFR-07658-1] c 05 N71-26293

**GAMMA RAY SPECTROMETERS**

Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659

**GAMMA RAYS**

Compton scatter attenuation gamma ray spectrometer  
[NASA-CASE-MFS-21441-1] c 14 N73-30392  
Low intensity X-ray and gamma-ray imaging device — fiber optics  
[NASA-CASE-GSC-12263-1] c 74 N79-20857  
Real-time 3D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N82-10862

**GANTRY CRANES**

Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c 03 N72-25021

**GAPS**

Electromagnetic transducer recording head having a laminated core section and tapered gap  
[NASA-CASE-NPO-10711-1] c 35 N77-21392  
Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709

**GARMENTS**

Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189  
Flexible joint for pressurizable garment  
[NASA-CASE-MSC-11072] c 54 N74-32546  
Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736  
Urine collection apparatus — feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740  
Thermal garment  
[NASA-CASE-XMS-03694-1] c 54 N82-29002

**GAS ANALYSIS**

Gas analyzer for bi-gaseous mixtures Patent  
[NASA-CASE-XLA-01131] c 14 N71-10774  
Microbalance including crystal oscillators for measuring contaminants in a gas system Patent  
[NASA-CASE-NPO-10144] c 14 N71-17701  
Time of flight mass spectrometer with feedback means from the detector to the low source and a specific counter Patent  
[NASA-CASE-XNP-01056] c 14 N71-23041  
Dual resonant cavity absorption cell Patent  
[NASA-CASE-LAR-10305] c 14 N71-26137  
Ion microprobe mass spectrometer for analyzing fluid materials Patent  
[NASA-CASE-ERC-10014] c 14 N71-28863  
Nondispersive gas analyzing method and apparatus wherein radiation is serially passed through a reference and unknown gas  
[NASA-CASE-ARC-10308-1] c 06 N72-31141  
Method and apparatus for determining the contents of contained gas samples  
[NASA-CASE-GSC-10903-1] c 14 N73-12444  
Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c 35 N74-26949  
Fast scan control for deflection type mass spectrometers  
[NASA-CASE-LAR-11428-1] c 35 N74-34857  
NDIR gas analyzer based on absorption modulation ratios for known and unknown samples  
[NASA-CASE-ARC-10802-1] c 35 N75-30502  
Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17656  
Nulling device for detection of trace gases by NDIR absorption  
[NASA-CASE-ARC-10760-1] c 25 N76-22323  
Analysis of volatile organic compounds — trace amounts of organic volatiles in gas samples  
[NASA-CASE-MSC-14428-1] c 23 N77-17161  
Fluid sampling device  
[NASA-CASE-GSC-12143-1] c 35 N77-32456  
Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015  
Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159

**GAS BAGS**

Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-09881] c 31 N71-16085

**GAS BEARINGS**

Externally pressurized fluid bearing Patent  
[NASA-CASE-XMF-00515] c 15 N70-34664  
Slit regulated gas journal bearing Patent  
[NASA-CASE-XNP-00476] c 15 N70-38620  
Air bearing Patent  
[NASA-CASE-XMF-00339] c 15 N70-39896  
Air bearing Patent  
[NASA-CASE-XMF-01887] c 15 N71-10617  
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[NASA-CASE-XMS-01445] c 12 N71-16031



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Angular displacement indicating gas bearing support system Patent [NASA-CASE-XLA-09346] c 15 N71-28740

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Baseline stabilization system for ionization detector Patent [NASA-CASE-XNP-03128] c 10 N70-41991

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Ultraviolet atomic emission detector [NASA-CASE-HQN-10756-1] c 14 N72-25428

Method and apparatus for determining the contents of contained gas samples [NASA-CASE-GSC-10903-1] c 14 N73-12444

Gas chromatograph injection system [NASA-CASE-ARC-10344-2] c 35 N75-26334

Chelate-modified polymers for atmospheric gas chromatography [NASA-CASE-ARC-11154-1] c 25 N80-23383

**GAS COMPOSITION**

Method and means for helium/hydrogen ratio measurement by alpha scattering [NASA-CASE-NPO-14079-1] c 25 N80-20334

Mobile sampler for use in acquiring samples of terrestrial atmospheric gasses [NASA-CASE-NPO-15220-1] c 35 N81-24414

Microwave limb sounder — measuring trace gases in the upper atmosphere [NASA-CASE-NPO-14544-1] c 46 N82-12685

**GAS COOLED REACTORS**

Gas core nuclear reactor Patent [NASA-CASE-LEW-10250-1] c 22 N71-28759

**GAS COOLING**

Refrigeration apparatus [NASA-CASE-NPO-10309] c 15 N69-23190

Gas cooled high temperature thermocouple Patent [NASA-CASE-XLE-09475-1] c 33 N71-15568

Containerless melting and rapid solidification apparatus and method [NASA-CASE-MFS-25305-1] c 35 N81-16427

Apparatus and method for heating a material in a transparent ampoule — crystal growth [NASA-CASE-MFS-25436-1] c 76 N81-30012

**GAS DENSITY**

Dynamic sensor Patent [NASA-CASE-XAC-02877] c 14 N70-41681

Method for measuring the characteristics of a gas Patent [NASA-CASE-XLA-03375] c 16 N71-24074

Device for measuring light scattering wherein the measuring beam is successively reflected between a pair of parallel reflectors Patent [NASA-CASE-XER-11203] c 14 N71-28994

Gaseous control system for nuclear reactors [NASA-CASE-XLE-04599] c 22 N72-20597

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Wide range dynamic pressure sensor [NASA-CASE-ARC-10263-1] c 14 N72-22438

Apparatus for absolute pressure measurement [NASA-CASE-LAR-10000] c 14 N73-30394

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Hydrogen leak detection device Patent [NASA-CASE-MFS-11537] c 14 N71-20442

Leak detector wherein a probe is monitored with ultraviolet radiation Patent [NASA-CASE-ERC-10034] c 15 N71-24886

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Carbon monoxide monitor — using real time operation [NASA-CASE-MFS-22060-1] c 35 N75-29380

Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector — for determining density of gas [NASA-CASE-ARC-10631-1] c 74 N76-20958

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Particulate and aerosol detector [NASA-CASE-LAR-11434-1] c 35 N76-22509

Cryogenic liquid sensor [NASA-CASE-NPO-10619-1] c 35 N77-21393

Optically selective, acoustically resonant gas detecting transducer [NASA-CASE-ARC-10639-1] c 35 N78-13400

Stark cell optoacoustic detection of constituent gases in sample [NASA-CASE-NPO-14143-1] c 25 N81-14015

Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis [NASA-CASE-NPO-15102-1] c 25 N81-25159

**GAS DISCHARGE TUBES**

Self-repeating plasma generator having communicating annular and linear arc discharge passages Patent [NASA-CASE-XLA-03103] c 25 N71-21693

**GAS DISCHARGES**

Parametric microwave noise generator Patent [NASA-CASE-XER-11019] c 09 N71-23598

State-of-charge coulometer [NASA-CASE-NPO-15759-1] c 35 N82-26630

**GAS EVOLUTION**

Filter system for control of outgas contamination in vacuum Patent [NASA-CASE-MFS-14711] c 15 N71-26185

**GAS EXPANSION**

Sealed battery gas manifold construction Patent [NASA-CASE-XNP-03378] c 03 N71-11051

Refrigeration apparatus Patent [NASA-CASE-XNP-08877] c 15 N71-23025

Gas operated actuator [NASA-CASE-NPO-11340] c 15 N72-33477

**GAS FLOW**

Fluid flow restrictor Patent [NASA-CASE-NPO-10117] c 15 N71-15608

High pressure gas filter system Patent [NASA-CASE-MFS-12806] c 14 N71-17588

Burst diaphragm flow initiator Patent [NASA-CASE-MFS-12915] c 11 N71-17600

Method of recording a gas flow pattern Patent [NASA-CASE-XMF-01779] c 12 N71-20815

Respiration monitor [NASA-CASE-FRC-10012] c 14 N72-17329

Shock tube bypass piston tunnel [NASA-CASE-NPO-12109] c 11 N72-22245

Fluidic proportional thruster system [NASA-CASE-ARC-10106-1] c 28 N72-22769

Gas filter mounting structure [NASA-CASE-MSC-12297] c 14 N72-23457

Pressurized lighting system [NASA-CASE-KSC-10644] c 09 N72-27227

Method for controlling vapor content of a gas [NASA-CASE-NPO-10633] c 03 N72-28025

Gas flow control device [NASA-CASE-NPO-11479] c 15 N73-13462

Compact hydrogenator [NASA-CASE-NPO-11682-1] c 35 N74-15127

Apparatus for establishing flow of a fluid mass having a known velocity [NASA-CASE-MFS-21424-1] c 34 N74-27730

Condensate removal device for heat exchanger [NASA-CASE-MSC-14143-1] c 77 N75-20139

Flow measuring apparatus [NASA-CASE-LEW-12078-1] c 35 N75-30503

Gas compression apparatus [NASA-CASE-MSC-14757-1] c 35 N78-10428

Variable cycle gas turbine engines [NASA-CASE-LEW-12916-1] c 37 N78-17384

Directional flow sensor [NASA-CASE-FRC-11074-1] c 35 N82-11436

Covering solid, film cooled surfaces with a duplex thermal barrier coating [NASA-CASE-LEW-13450-1] c 34 N82-25483

Moisture content and gas sampling device — to test hermetically sealed electronic equipment [NASA-CASE-MSC-18868-1] c 35 N82-26634

Low noise lead screw positioner [NASA-CASE-NPO-15817-1] c 35 N82-33881

## GAS GENERATORS

Specialized halogen generator for purification of water Patent [NASA-CASE-XLA-08913] c 14 N71-28933

Quick disconnect coupling [NASA-CASE-NPO-11202] c 15 N72-25450

Electrolytic gas operated actuator [NASA-CASE-NPO-11369] c 15 N73-13467

Vortex breech high pressure gas generator [NASA-CASE-LAR-10549-1] c 31 N73-13898

Hydrogen rich gas generator [NASA-CASE-NPO-13342-1] c 37 N76-16446

Hydrogen-rich gas generator [NASA-CASE-NPO-13464-1] c 44 N76-18642

Hydrogen rich gas generator [NASA-CASE-NPO-13342-2] c 44 N76-29700

Hydrogen rich gas generator [NASA-CASE-NPO-13464-2] c 44 N76-29704

Hydrogen-rich gas generator [NASA-CASE-NPO-13560-1] c 44 N77-10636

A gas-to-hydraulic power converter [NASA-CASE-MSC-18794-1] c 37 N81-24445

## GAS GUNS

Electric arc device for heating gases Patent [NASA-CASE-XAC-00319] c 25 N70-41628

## GAS HEATING

Bimetallic fluid displacement apparatus — for stirring and heating stored gases and liquids [NASA-CASE-ARC-10441-1] c 35 N74-15126

## GAS INJECTION

Burning rate control of solid propellants Patent [NASA-CASE-XLE-03494] c 27 N71-21819

Compact hydrogenator [NASA-CASE-NPO-11682-1] c 35 N74-15127

Gas chromatograph injection system [NASA-CASE-ARC-10344-2] c 35 N75-26334

In-situ laser retorting of oil shale [NASA-CASE-LEW-12217-1] c 43 N78-14452

Gas turbine engine with recirculating bleed [NASA-CASE-LEW-12452-1] c 07 N78-25089

Ozonation of cooling tower waters [NASA-CASE-NPO-14340-1] c 45 N80-14579

Containerless melting and rapid solidification apparatus and method [NASA-CASE-MFS-25305-1] c 35 N81-16427

## GAS IONIZATION

Electrostatic plasma modulator for space vehicle re-entry communication Patent [NASA-CASE-XLA-01400] c 07 N70-41331

A multichannel photoionization chamber for absorption analysis Patent [NASA-CASE-ERC-10044-1] c 14 N71-27090

Modulated hydrogen ion flame detector [NASA-CASE-ARC-10322-1] c 35 N76-18403

Gas ion laser construction for electrically isolating the pressure gauge thereof [NASA-CASE-MFS-22597] c 36 N78-17366

Charge transfer reaction laser with preionization means [NASA-CASE-NPO-13945-1] c 36 N78-27402

Hydrogen hollow cathode ion source [NASA-CASE-LEW-12940-1] c 72 N80-33186

## GAS LASERS

Method and apparatus for stabilizing a gaseous optical maser Patent [NASA-CASE-XGS-03644] c 16 N71-18614

Inert gas metallic vapor laser [NASA-CASE-NPO-13449-1] c 36 N75-32441

Diffused waveguiding capillary tube with distributed feedback for a gas laser [NASA-CASE-NPO-13544-1] c 36 N76-18428

Gas ion laser construction for electrically isolating the pressure gauge thereof [NASA-CASE-MFS-22597] c 36 N78-17366

Charge transfer reaction laser with preionization means [NASA-CASE-NPO-13945-1] c 36 N78-27402

A solar pumped laser [NASA-CASE-LAR-12870-1] c 36 N82-25497

Spectrophone stabilized laser with line center offset frequency control [NASA-CASE-NPO-15516-1] c 36 N82-26652

## GAS LUBRICANTS

Gas lubricant compositions Patent [NASA-CASE-XLE-00353] c 18 N70-39897

Thrust bearing [NASA-CASE-LEW-11949-1] c 37 N76-29588

Cantilever mounted resilient pad gas bearing [NASA-CASE-LEW-12569-1] c 37 N79-10418

## GAS MASERS

Solid state chemical source for ammonia beam maser Patent [NASA-CASE-XGS-01504] c 18 N70-41578

Atomic hydrogen maser with bulb temperature control to remove wall shift in maser output frequency [NASA-CASE-HQN-10854-1] c 18 N73-13489



Method of producing a storage bulb for an atomic hydrogen maser  
[NASA-CASE-NPO-13050-1] c 36 N75-15029  
Atomic standard with variable storage volume  
[NASA-CASE-GSC-11895-1] c 35 N76-15436

**GAS MIXTURES**  
Gas analyzer for bi-gaseous mixtures Patent  
[NASA-CASE-XLA-01131] c 14 N71-10774  
Vapor pressure measuring system and method Patent  
[NASA-CASE-XMS-01618] c 14 N71-20741  
Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c 18 N71-20742  
Analysis of hydrogen-deuterium mixtures  
[NASA-CASE-NPO-11322] c 06 N72-25146  
Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-2] c 44 N76-29700  
Hydrogen-rich gas generator  
[NASA-CASE-NPO-13560-1] c 44 N77-10636  
Chemical vapor deposition reactor — providing uniform film thickness  
[NASA-CASE-NPO-13650-1] c 25 N79-28253

**GAS PIPES**  
Fluid flow restrictor Patent  
[NASA-CASE-NPO-10117] c 15 N71-15608

**GAS PRESSURE**  
Measuring device Patent  
[NASA-CASE-XMS-01546] c 14 N70-40233  
Dynamic sensor Patent  
[NASA-CASE-XAC-02877] c 14 N70-41681  
Wide range dynamic pressure sensor  
[NASA-CASE-ARC-10263-1] c 14 N72-22438  
Measurement of gas production of microorganisms — using pressure sensors  
[NASA-CASE-LAR-11326-1] c 35 N75-33368  
Depressurization of arc lamps  
[NASA-CASE-NPO-10790-1] c 33 N77-21316  
Pressure limiting propellant actuating system  
[NASA-CASE-MS-C-18179-1] c 20 N80-18097  
Method of an apparatus for measuring temperature and pressure — remote sensing of the atmosphere  
[NASA-CASE-GSC-12558-1] c 35 N82-29580  
Reactant pressure differential control for fuel cell gases  
[NASA-CASE-MS-C-20127-1] c 44 N82-32843

**GAS STREAMS**  
Method for measuring the characteristics of a gas Patent  
[NASA-CASE-XLA-03375] c 16 N71-24074  
Stagnation pressure probe — for measuring pressure of supersonic gas streams  
[NASA-CASE-LAR-11139-1] c 35 N74-32878  
Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067  
Simultaneous treatment of SO<sub>2</sub> containing stack gases and waste water  
[NASA-CASE-MS-C-16258-1] c 45 N79-12584  
Gas levitator and method for containerless processing  
[NASA-CASE-MFS-25509-1] c 34 N82-10359

**GAS TEMPERATURE**  
Method for measuring the characteristics of a gas Patent  
[NASA-CASE-XLA-03375] c 16 N71-24074  
Method of an apparatus for measuring temperature and pressure — remote sensing of the atmosphere  
[NASA-CASE-GSC-12558-1] c 35 N82-29580

**GAS TRANSPORT**  
Purging means and method for Xenon arc lamps  
[NASA-CASE-NPO-11978] c 31 N78-17238

**GAS TUBES**  
Toggle mechanism for pinching metal tubes  
[NASA-CASE-GSC-12274-1] c 37 N79-28550

**GAS TURBINE ENGINES**  
Gas turbine engine fuel control  
[NASA-CASE-LEW-11187-1] c 28 N73-19793  
Swirl can primary combustor  
[NASA-CASE-LEW-11328-1] c 23 N73-30665  
Controlled separation combustor — airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c 20 N76-14190  
Fused silicate coatings containing discrete particles for protecting niobium alloys — used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11178-1] c 27 N76-16229  
Dual output variable pitch turbofan actuation system  
[NASA-CASE-LEW-12419-1] c 07 N77-14025  
Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12830-1] c 07 N77-23106  
Blade retainer assembly  
[NASA-CASE-LEW-12608-1] c 07 N77-27116  
Nickel base alloy — for gas turbine engine stator vanes  
[NASA-CASE-LEW-12270-1] c 26 N77-32280  
Bearing seat usable in a gas turbine engine  
[NASA-CASE-LEW-12477-1] c 37 N77-32501  
Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12321-1] c 37 N78-10467

Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384  
Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-2] c 07 N78-18066  
Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067  
Automotive gas turbine fuel control  
[NASA-CASE-LEW-12785-1] c 37 N78-24545  
Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089  
Independent power generator  
[NASA-CASE-LAR-11208-1] c 44 N78-32539  
Redundant disc  
[NASA-CASE-LEW-12496-1] c 07 N78-33101  
Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-3] c 07 N79-14096  
Variable area exhaust nozzle  
[NASA-CASE-LEW-12378-1] c 07 N79-14097  
Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318  
Curved centerline air intake for a gas turbine engine  
[NASA-CASE-LEW-13201-1] c 07 N81-14999  
Apparatus for sensor failure detection and correction in a gas turbine engine control system  
[NASA-CASE-LEW-12907-2] c 07 N81-19115  
Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366  
Overlay metallic-cermet alloy coating systems — for gas turbine engines  
[NASA-CASE-LEW-13639-1] c 27 N82-33522

**GAS TURBINES**  
Gas turbine combustor Patent  
[NASA-CASE-LEW-10286-1] c 28 N71-28915  
Gas turbine exhaust nozzle — for noise reduction  
[NASA-CASE-LEW-11569-1] c 07 N74-15453  
Gas turbine engine with convertible accessories  
[NASA-CASE-LEW-12390-1] c 07 N78-17056  
Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090  
Direct heating surface combustor  
[NASA-CASE-LEW-11877-1] c 34 N78-27357  
Apparatus and method for reducing thermal stress in a turbine rotor  
[NASA-CASE-LEW-12232-1] c 07 N79-10057  
Method and turbine for extracting kinetic energy from a stream of two-phase fluid  
[NASA-CASE-NPO-14130-1] c 34 N79-20335  
Corrosion resistant thermal barrier coating — protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188

**GAS VALVES**  
High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817  
Shrink-fit gas valve Patent  
[NASA-CASE-XGS-00587] c 15 N70-35087  
Thermally operated valve Patent  
[NASA-CASE-XLE-00815] c 15 N70-35407  
Transfer valve Patent  
[NASA-CASE-XAC-01158] c 15 N71-23051  
Slow opening valve  
[NASA-CASE-MS-C-20112-1] c 37 N82-28641  
Reactant pressure differential control for fuel cell gases  
[NASA-CASE-MS-C-20127-1] c 44 N82-32843

**GAS WELDING**  
Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871  
Grain refinement control in TIG arc welding  
[NASA-CASE-MS-C-19095-1] c 37 N75-19683

**GAS-LIQUID INTERACTIONS**  
Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c 34 N75-26282

**GAS-METAL INTERACTIONS**  
Improved refractory coatings — sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209  
Method and apparatus for coating substrates using lasers  
[NASA-CASE-LEW-13526-1] c 26 N82-22347  
Refractory coatings and method of producing the same  
[NASA-CASE-LEW-13169-1] c 26 N82-29415

**GASDYNAMIC LASERS**  
Diatom infrared gasdynamic laser — for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c 36 N75-31426

**GASEOUS DIFFUSION**  
Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080  
Gas core nuclear reactor Patent  
[NASA-CASE-LEW-10250-1] c 22 N71-28759

Gas diffusion liquid storage bag and method of use for storing blood  
[NASA-CASE-NPO-13930-1] c 52 N79-14749

**GASEOUS FISSION REACTORS**  
Gas core nuclear reactor Patent  
[NASA-CASE-LEW-10250-1] c 22 N71-28759

**GASEOUS ROCKET PROPELLANTS**  
Ion rocket Patent  
[NASA-CASE-XLE-00376] c 28 N70-37245  
Continuous detonation reaction engine Patent  
[NASA-CASE-XMF-06926] c 28 N71-22983

**GASES**  
Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372  
Observation window for a gas confining chamber  
[NASA-CASE-NPO-10890] c 11 N73-12265  
Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484  
Low gravity phase separator  
[NASA-CASE-MS-C-14773-1] c 35 N78-12390  
Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345

**GASKETS**  
Cryogenic connector for vacuum use Patent  
[NASA-CASE-XGS-02441] c 15 N70-41629  
Reinforced polyquinoxaline gasket and method of preparing the same — resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364-1] c 37 N74-18126

**GATES (CIRCUITS)**  
Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon Patent  
[NASA-CASE-XGS-01881] c 09 N70-40123  
SCR blocking pulse gate amplifier Patent  
[NASA-CASE-XLA-07497] c 09 N71-12514  
Logic AND gate for fluid circuits Patent  
[NASA-CASE-XLA-07391] c 12 N71-17579  
Synchronous counter Patent  
[NASA-CASE-XGS-02440] c 08 N71-19432  
Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316  
Memory device for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-2] c 60 N78-10709  
Transformer regulated self-stabilizing chopper  
[NASA-CASE-XGS-09186] c 33 N78-17295  
Pulsed phase locked loop strain monitor  
[NASA-CASE-LAR-12772-1] c 33 N81-15195  
Controller for computer control of brushless dc motors — automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352

**GATES (OPENINGS)**  
Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10686] c 14 N71-28935

**GAW-1 AIRFOIL**  
Airfoil shape for flight at subsonic speeds — design analysis and aerodynamic characteristics of the GAW-1 airfoil  
[NASA-CASE-LAR-10585-1] c 02 N76-22154

**GEAR TEETH**  
Wobble gear drive mechanism — for aerospace environments  
[NASA-CASE-WOO-00625] c 37 N78-17385  
Belt for transmitting power from a cogged driving member to a cogged driven member  
[NASA-CASE-GSC-12289-1] c 37 N80-32717

**GEARS**  
Precision stepping drive Patent  
[NASA-CASE-MFS-14772] c 15 N71-17692  
Bidirectional step torque filter with zero backlash characteristic Patent  
[NASA-CASE-XGS-04227] c 15 N71-21744  
Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984  
Concentric differential gearing arrangement  
[NASA-CASE-ARC-10462-1] c 37 N74-27901  
Sequencing device utilizing planetary gear set  
[NASA-CASE-MS-C-19514-1] c 37 N79-20377  
Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318  
Clutchless multiple drive source for output shaft  
[NASA-CASE-ARC-11325-1] c 37 N82-22496  
Directional gear ratio transmission  
[NASA-CASE-LAR-12644-1] c 37 N82-29605

**GELLED ROCKET PROPELLANTS**  
Process of forming particles in a cryogenic path Patent  
[NASA-CASE-NPO-10250] c 23 N71-16212

**GELS**  
Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906



## GENERAL AVIATION AIRCRAFT

Explosively activated egress area  
[NASA-CASE-LAR-12624-1] c 03 N81-29107

## GENERATORS

Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-MFS-21424-1] c 34 N74-27730

## GEODESY

Navigation system and method  
[NASA-CASE-GSC-12508-1] c 04 N81-26085

## GEODETIC SURVEYS

Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-1] c 36 N81-22344

## GEODIMETERS

Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-1] c 36 N81-22344

## GEOLOGICAL SURVEYS

Borehole geological assessment  
[NASA-CASE-NPO-14231-1] c 46 N80-10709

Geological assessment probe  
[NASA-CASE-NPO-14558-1] c 46 N80-24906

## GEOMETRY

Rhomboid prism pair for rotating the plane of parallel light beams — laser velocimeters  
[NASA-CASE-ARC-11311-1] c 74 N81-16882

## GERMANIUM

Germanium coated microbridge and method  
[NASA-CASE-MFS-23274-1] c 33 N78-13320

## GIMBALS

Gimbaled, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c 28 N70-34162

Azimuth laying system Patent  
[NASA-CASE-XMF-01669] c 21 N71-23289

Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694

Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243

Bearing and gimbal lock mechanism and spiral flex lead module Patent  
[NASA-CASE-GSC-10556-1] c 31 N71-26537

Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175

Autonomous navigation system — gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047

Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N81-22048

## GIRDERS

Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N81-12283

## GLANDS (SEALS)

Spiral groove seal  
[NASA-CASE-XLE-10326-2] c 15 N72-29488

Circumferential shaft seal  
[NASA-CASE-LEW-12119-2] c 37 N81-26447

## GLASS

Method for producing a solar cell having an integral protective covering  
[NASA-CASE-XGS-04531] c 03 N69-24267

Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988

Silicon solar cell with cover glass bonded to cell by metal pattern Patent  
[NASA-CASE-XLE-08569] c 03 N71-23449

Apparatus for applying cover slides  
[NASA-CASE-NPO-10575] c 03 N72-25019

Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063

Covered silicon solar cells and method of manufacture — with polymers films  
[NASA-CASE-LEW-11065-2] c 44 N76-14600

Window defect planar mapping technique  
[NASA-CASE-MSC-19442-1] c 74 N77-10899

Method of forming shrink-fit compression seal  
[NASA-CASE-LAR-11563-1] c 37 N77-23482

Reaction cured glass and glass coatings  
[NASA-CASE-ARC-11051-1] c 27 N78-32260

Method for milling and drilling glass  
[NASA-CASE-GSC-12636-1] c 37 N80-29705

Acoustic bubble removal  
[NASA-CASE-NPO-15334-1] c 37 N82-22497

Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 33 N82-23396

Method and apparatus for producing concentric hollow spheres — for nuclear fusion by inertial confinement  
[NASA-CASE-NPO-14596-2] c 31 N82-25401

Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

## GLASS COATINGS

Method of attaching a cover glass to a silicon solar cell Patent  
[NASA-CASE-XLE-08569-2] c 03 N71-24681

Process for glass coating an ion accelerator gnd Patent

[NASA-CASE-LEW-10278-1] c 15 N71-28582

Method of coating solar cell with borosilicate glass and resultant product  
[NASA-CASE-GSC-11514-1] c 03 N72-24037

Transmitting and reflecting diffuser — using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879

High temperature glass thermal control structure and coating  
[NASA-CASE-ARC-11164-1] c 27 N82-10228

Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520

## GLASS ELECTRODES

Liquid junction and method of fabricating the same Patent Application  
[NASA-CASE-NPO-10682] c 15 N70-34699

Apparatus and method of inserting a microelectrode in body tissue or the like using vibration means  
[NASA-CASE-NPO-13910-1] c 52 N79-27836

## GLASS FIBER REINFORCED PLASTICS

Low density bismaleimide-carbon microballoon composites  
[NASA-CASE-ARC-11040-1] c 24 N79-16915

Method of manufacture of bonded fiber flywheel — fiberglass-epoxy  
[NASA-CASE-MFS-23674-1] c 24 N81-29163

## GLASS FIBERS

Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c 03 N71-11053

Lathe tool bit and holder for machining fiberglass materials  
[NASA-CASE-XLA-10470] c 15 N72-21489

Polyimide resin-fiberglass cloth laminates for printed circuit boards  
[NASA-CASE-MFS-20408] c 18 N73-12604

Method of repairing discontinuity in fiberglass structures  
[NASA-CASE-LAR-10416-1] c 24 N74-30001

Fiber modified polyurethane foam for ballistic protection  
[NASA-CASE-ARC-10714-1] c 27 N76-15310

Vacuum pressure molding technique  
[NASA-CASE-LAR-10073-1] c 37 N76-24575

Fiberglass/epoxy composite automotive door structure including a glass-reinforced intrusion strip  
[NASA-CASE-NPO-15057-1] c 24 N81-19230

Glass compositions with a high modulus of elasticity — nontoxic glass fibers  
[NASA-CASE-HQN-10274-1] c 27 N82-29451

High modulus invert analog glass compositions containing beryllia  
[NASA-CASE-HQN-10931-2] c 27 N82-29452

## GLAUCOMA

Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12955-1] c 52 N80-14684

## GLIDE PATHS

Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10458-1] c 05 N75-12930

## GLOBES

Orbital and entry tracking accessory for globes — to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015

## GLOVES

Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080

Restraining mechanism  
[NASA-CASE-MSC-13054] c 54 N78-17677

Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-1] c 54 N82-32985

Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-2] c 54 N82-32986

## GLOW DISCHARGES

Deposition of alloy films — on irregularly shaped metal object  
[NASA-CASE-LEW-11262-1] c 27 N74-13270

Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233

Electric discharge for treatment of trace contaminants  
[NASA-CASE-ARC-10975-1] c 33 N79-15245

Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401

## GLUCOSE

Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487

## GOLD COATINGS

Thin window, drifted silicon, charged particle detector  
[NASA-CASE-XLE-10529] c 14 N69-23191

Improved chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N82-22672

## GONDOLAS

System for stabilizing torque between a balloon and gondola  
[NASA-CASE-GSC-11077-1] c 02 N73-13008

## GRANULAR MATERIALS

Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c 15 N71-20440

## GRAPHITE

Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735

Method of preparing graphite reinforced aluminum composite  
[NASA-CASE-MFS-21077-1] c 24 N75-28135

Method of adhering bone to a rigid substrate using a graphite fiber reinforced bone cement  
[NASA-CASE-NPO-13764-1] c 27 N78-17215

Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103

## GRAPHITE-EPOXY COMPOSITES

Partial interlaminar separation system for composites  
[NASA-CASE-LAR-12065-1] c 24 N81-14000

## GRAPHITE-POLYIMIDE COMPOSITES

Graphite/polyimide structural applications  
[NASA-CASE-LAR-12547-1] c 24 N82-25324

## GRATINGS (SPECTRA)

Concave grating spectrometer Patent  
[NASA-CASE-XGS-01036] c 14 N70-40003

Diffraction grating configuration for X-ray and ultraviolet focusing  
[NASA-CASE-GSC-12357-1] c 74 N80-21140

## GRAVIMETERS

Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587

## GRAVITATION

Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397

Anti-gravity device  
[NASA-CASE-MFS-22758-1] c 70 N75-26789

## GRAVITATIONAL CONSTANT

Gravity device Patent  
[NASA-CASE-XMF-00424] c 11 N70-38196

## GRAVITATIONAL EFFECTS

Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619

Rotary plant growth accelerating apparatus — weightlessness  
[NASA-CASE-ARC-10722-1] c 51 N75-25503

## GRAVITATIONAL FIELDS

Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537

Process for preparation of large-particle-size monodisperse latexes  
[NASA-CASE-MFS-25000-1] c 25 N81-19242

## GRAVITY GRADIENT SATELLITES

Stabilization of gravity oriented satellites Patent  
[NASA-CASE-XAC-01591] c 31 N71-17729

Station keeping of a gravity gradient stabilized satellite Patent  
[NASA-CASE-XLA-03132] c 31 N71-22969

## GRAVITY GRADIOMETERS

Gravity device Patent  
[NASA-CASE-XMF-00424] c 11 N70-38196

Gravity gradient attitude control system Patent  
[NASA-CASE-GSC-10555-1] c 21 N71-27324

## GRAZING INCIDENCE

Diffraction grating configuration for X-ray and ultraviolet focusing  
[NASA-CASE-GSC-12357-1] c 74 N80-21140

## GRIDS

Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310

Apparatus for forming dished ion thruster grids  
[NASA-CASE-LEW-11694-2] c 37 N76-14481

Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c 20 N76-21276

Solar cell grid patterns  
[NASA-CASE-NPO-13087-2] c 44 N76-31666

## GRINDING (MATERIAL REMOVAL)

Laser apparatus for removing material from rotating objects Patent  
[NASA-CASE-MFS-11279] c 16 N71-20400

Method for producing dispersion strengthened alloys by converting metal to a halide, comminuting, reducing the metal halide to the metal and sintering  
[NASA-CASE-LEW-10450-1] c 15 N72-25448

Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149

## GRINDING MACHINES

Grinding arrangement for ball nose milling cutters  
[NASA-CASE-LAR-10450-1] c 37 N74-27905

## GROOVES

Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c 15 N71-22877



Spiral groove seal — for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c 37 N74-10474

Spiral groove seal — for rotating shaft  
[NASA-CASE-XLE-10326-4] c 37 N74-15125

**GROUND EFFECT MACHINES**

Gravity stabilized flying vehicle Patent  
[NASA-CASE-MSC-12111-1] c 02 N71-11039

Air cushion lift pad Patent  
[NASA-CASE-MFS-14685] c 31 N71-15689

Open tube guideway for high speed air cushioned vehicles  
[NASA-CASE-LAR-10256-1] c 85 N74-34672

**GROUND HANDLING**

Supporting and protecting device Patent  
[NASA-CASE-XMF-00580] c 11 N70-35383

**GROUND STATIONS**

Traffic control system and method Patent  
[NASA-CASE-GSC-10087-1] c 02 N71-19287

Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118

Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323

**GROUND SUPPORT EQUIPMENT**

Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391

Controlled release device Patent  
[NASA-CASE-XKS-03338] c 15 N71-24043

Apparatus for measuring an aircraft's speed and height  
[NASA-CASE-LAR-12275-1] c 35 N79-18296

**GROUND-AIR-GROUND COMMUNICATION**

Retrodirective optical system  
[NASA-CASE-XGS-04480] c 16 N69-27491

Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c 21 N70-41930

Location identification system  
[NASA-CASE-ERC-10324] c 07 N72-25173

Satellite personal communications system  
[NASA-CASE-NPO-14480-1] c 32 N80-20448

**GROUT**

Antenna grout replacement system  
[NASA-CASE-NPO-15205-1] c 37 N81-19457

**GUARDS (SHIELDS)**

Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343

**GUIDANCE (MOTION)**

Gravity stabilized flying vehicle Patent  
[NASA-CASE-MSC-12111-1] c 02 N71-11039

Adjustable attitude guide device Patent  
[NASA-CASE-XLA-07911] c 15 N71-15571

Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10686] c 14 N71-28935

Two component bearing Patent  
[NASA-CASE-XLA-00013] c 15 N71-29136

Cable stabilizer for open shaft cable operated elevators  
[NASA-CASE-KSC-10513] c 15 N72-25453

Phase sensitive guidance sensor for wire-following vehicles  
[NASA-CASE-NPO-15341-1] c 33 N82-12346

**GUIDANCE SENSORS**

Light sensitive digital aspect sensor Patent  
[NASA-CASE-XGS-00359] c 14 N70-34158

Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c 14 N71-15621

Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673

Light sensor  
[NASA-CASE-NPO-11311] c 14 N72-25414

Sun direction detection system  
[NASA-CASE-NPO-13722-1] c 74 N77-22951

Terminal guidance sensor system  
[NASA-CASE-NPO-14521-1] c 54 N79-20746

Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N81-22048

Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N81-22894

Phase sensitive guidance sensor for wire-following vehicles  
[NASA-CASE-NPO-15341-1] c 33 N82-12346

Sun sensing guidance system for high altitude aircraft  
[NASA-CASE-FRC-11052-1] c 04 N82-23231

**GUN LAUNCHERS**

Self-obturing, gas operated launcher  
[NASA-CASE-NPO-11013] c 11 N72-22247

**GUN PROPELLANTS**

Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255

Hypervelocity gun — using both electric and chemical energy for projectile propulsion  
[NASA-CASE-XLE-03186-1] c 09 N79-21084

**GUNN EFFECT**

Voltage tunable Gunn-type microwave generator Patent  
[NASA-CASE-XER-07894] c 09 N71-18721

Shielded cathode mode bulk effect devices  
[NASA-CASE-ERC-10119] c 26 N72-21701

Gunn-type solid state devices  
[NASA-CASE-XER-07895] c 26 N72-25679

Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235

**GUNS**

Method of peening and portable peening gun  
[NASA-CASE-MFS-23047-1] c 37 N76-18454

**GYNECOLOGY**

Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

**GYRATORS**

Gyrator type circuit Patent  
[NASA-CASE-XAC-10608-1] c 09 N71-12517

Gyrator employing field effect transistors  
[NASA-CASE-MFS-21433] c 09 N73-20232

Integrated P-channel MOS gyrator  
[NASA-CASE-MFS-22343-1] c 33 N74-34638

Integrable power gyrator — with Z-matrix design using parallel transistors  
[NASA-CASE-MFS-22342-1] c 33 N75-30428

**GYROSCOPES**

Externally pressurized fluid bearing Patent  
[NASA-CASE-XMF-00515] c 15 N70-34664

Air bearing Patent  
[NASA-CASE-XMF-00339] c 15 N70-39896

Spacecraft experiment pointing and attitude control system Patent  
[NASA-CASE-XLA-05464] c 21 N71-14132

Temperature compensated digital inertial sensor — circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c 35 N74-15094

All sky pointing attitude control system  
[NASA-CASE-ARC-10716-1] c 35 N77-20399

**GYROSCOPIC PENDULUMS**

Autonomous navigation system — gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047

**GYROSTABILIZERS**

Passive dual spin misalignment compensators — gyro-stabilized device  
[NASA-CASE-GSC-11479-1] c 35 N74-28097

Annular momentum control device used for stabilization of space vehicles and the like  
[NASA-CASE-LAR-11051-1] c 15 N76-14158

Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N81-22048

## H

## HAFFNIUM

Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584

## HALIDES

Method for producing dispersion strengthened alloys by converting metal to a halide, comminuting, reducing the metal halide to the metal and sintering  
[NASA-CASE-LEW-10450-1] c 15 N72-25448

Zinc-halide battery with molten electrolyte  
[NASA-CASE-NPO-11961-1] c 44 N76-18643

## HALL EFFECT

Hall current measuring apparatus having a series resistor for temperature compensation Patent  
[NASA-CASE-XAC-01662] c 14 N71-23037

Brushless direct current tachometer Patent  
[NASA-CASE-MFS-20385] c 09 N71-24904

Hall effect transducer  
[NASA-CASE-LAR-10620-1] c 09 N72-25255

Redundant speed control for brushless Hall effect motor  
[NASA-CASE-MFS-20207-1] c 09 N73-32107

Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c 35 N75-13213

Magnetic field control — electromechanical torquing device  
[NASA-CASE-MFS-23828-1] c 33 N82-26569

## HALL GENERATORS

Hall current measuring apparatus having a series resistor for temperature compensation Patent  
[NASA-CASE-XAC-01662] c 14 N71-23037

## HALOGENS

Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739

## HAMMERS

Apparatus for making diamonds  
[NASA-CASE-MFS-20698] c 15 N72-20446

## HAND (ANATOMY)

Mechanically actuated triggered hand  
[NASA-CASE-MFS-20413] c 15 N72-21463

Therapeutic hand exerciser  
[NASA-CASE-LAR-11667-1] c 52 N76-19785

Compact artificial hand  
[NASA-CASE-NPO-13906-1] c 54 N79-24652

**HANDLING EQUIPMENT**

Supporting and protecting device Patent  
[NASA-CASE-XMF-00580] c 11 N70-35383

Device for handling printed circuit cards Patent  
[NASA-CASE-MFS-20453] c 15 N71-29133

**HARDENING (MATERIALS)**

Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236

**HARMONIC GENERATORS**

Wide band doubler and sine wave quadrature generator  
[NASA-CASE-NPO-11133] c 10 N72-20223

**HARNESSES**

Pressure suit tie-down mechanism Patent  
[NASA-CASE-XMS-00784] c 05 N71-12335

One hand backpack harness  
[NASA-CASE-LAR-10102-1] c 05 N72-23085

Shoulder harness and lap belt restraint system  
[NASA-CASE-ARC-10519-2] c 05 N75-25915

**HATCHES**

Emergency escape system Patent  
[NASA-CASE-MSC-12086-1] c 05 N71-12345

**HEAD-UP DISPLAYS**

Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N82-29319

**HEART FUNCTION**

Rate meter  
[NASA-CASE-MFS-20418] c 14 N73-24473

Ultrasonic biomedical measuring and recording apparatus — for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10597-1] c 52 N74-20726

**HEART RATE**

Digital cardiometer system Patent  
[NASA-CASE-XMS-02399] c 05 N71-22896

Rate meter  
[NASA-CASE-MFS-20418] c 14 N73-24473

Digital computing cardiometer  
[NASA-CASE-MFS-20284-1] c 52 N74-12778

Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969

Dual physiological rate measurement instrument  
[NASA-CASE-MSC-20078-1] c 52 N82-32971

**HEAT**

Thermionic converter with current augmented by self induced magnetic field Patent  
[NASA-CASE-XLE-01903] c 22 N71-23599

**HEAT EXCHANGERS**

Electro-thermal rocket Patent  
[NASA-CASE-XLE-00267] c 28 N70-33356

Space suit heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439

Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725

Shell side liquid metal boiler  
[NASA-CASE-NPO-10831] c 33 N72-20915

Helium refrigerator and method for decontaminating the refrigerator  
[NASA-CASE-NPO-10634] c 23 N72-25619

Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c 77 N75-20139

Heat exchanger system and method  
[NASA-CASE-LAR-10799-2] c 34 N76-17317

Heat transfer device  
[NASA-CASE-MFS-22938-1] c 34 N76-18374

Heat exchanger  
[NASA-CASE-MFS-22991-1] c 34 N77-10463

Flat-plate heat pipe  
[NASA-CASE-GSC-11998-1] c 34 N77-32413

Combustor — low nitrogen oxide formation  
[NASA-CASE-NPO-13958-1] c 25 N79-11151

Fuel delivery system including heat exchanger means  
[NASA-CASE-LEW-12793-1] c 37 N79-11403

Heat exchanger — rocket combustion chambers and cooling systems  
[NASA-CASE-LEW-12252-1] c 34 N79-13288

Heat exchanger and method of making — bonding rocket chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N79-13289

Thermal energy transformer  
[NASA-CASE-NPO-14058-1] c 44 N79-18443

Portable breathing system — a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MSC-16182-1] c 54 N80-10799

Heat exchanger and method of making — rocket lining  
[NASA-CASE-LEW-12441-2] c 34 N80-24573

A cycling Joule Thomson refrigerator  
[NASA-CASE-NPO-15251-1] c 31 N81-19344

Heat exchanger and method of making  
[NASA-CASE-LEW-12441-3] c 44 N81-24519



## HEAT FLUX

- Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c 14 N69-27459
- Heat flux measuring system Patent  
[NASA-CASE-XFR-03802] c 33 N71-23085
- Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948

## HEAT MEASUREMENT

- Thermal detector of electromagnetic energy by means of a vibrating electrode Patent  
[NASA-CASE-XAC-10768] c 09 N71-18830
- Specific wavelength colorimeter — for measuring given solute concentration in test sample  
[NASA-CASE-MSC-14081-1] c 35 N74-27860

## HEAT PIPES

- Heat pipe thermionic diode power system Patent  
[NASA-CASE-XMF-05843] c 03 N71-11055
- Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486
- Isothermal cover with thermal reservoirs Patent  
[NASA-CASE-MFS-20355] c 33 N71-25353
- Structural heat pipe — for spacecraft wall thermal insulation system  
[NASA-CASE-GSC-11619-1] c 34 N75-12222
- Method of forming a wick for a heat pipe  
[NASA-CASE-NPO-13391-1] c 34 N76-27515
- Production of I-123  
[NASA-CASE-LEW-11390-3] c 25 N76-29379
- Heat pipe with dual working fluids  
[NASA-CASE-ARC-10198] c 34 N78-17336
- Multi-chamber controllable heat pipe  
[NASA-CASE-ARC-10199] c 34 N78-17337
- Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523
- Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 25 N81-19245
- Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 34 N81-22310
- Heat pipe cooled probe  
[NASA-CASE-LAR-12588-1] c 44 N81-24525
- High thermal power density heat transfer — thermionic converters  
[NASA-CASE-LEW-12950-1] c 34 N82-11399

## HEAT PUMPS

- Thermal pump-compressor for space use Patent  
[NASA-CASE-XLA-00377] c 33 N71-17610
- Manually actuated heat pump  
[NASA-CASE-NPO-10677] c 05 N72-11084
- Pump for delivering heated fluids  
[NASA-CASE-NPO-11417] c 15 N73-24513
- Magnetic heat pumping  
[NASA-CASE-LEW-12508-1] c 34 N78-17335
- Cooling system for high speed aircraft  
[NASA-CASE-LAR-12406-1] c 05 N81-26114
- Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N82-24449

## HEAT RADIATORS

- Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035
- Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611
- Space simulation and radiative property testing system and method Patent  
[NASA-CASE-MFS-20096] c 14 N71-30026

## HEAT RESISTANT ALLOYS

- High temperature nickel-base alloy Patent  
[NASA-CASE-XLE-00151] c 17 N70-33283
- Nickel-base alloy Patent  
[NASA-CASE-XLE-00283] c 17 N70-36616
- High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-02991] c 17 N71-16025
- Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365
- Method of forming superalloys  
[NASA-CASE-LEW-10805-1] c 15 N73-13465
- Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c 37 N74-11301
- Method of forming articles of manufacture from superalloy powders  
[NASA-CASE-LEW-10805-2] c 37 N74-13179
- Refractory porcelain enamel passive control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c 27 N75-27160
- Cermet composition and method of fabrication — heat resistant alloys and powders  
[NASA-CASE-NPO-13120-1] c 27 N76-15311
- Metallic hot wire anemometer — for high speed wind tunnel tests  
[NASA-CASE-ARC-10911-1] c 35 N77-20400
- Method of growing composites of the type exhibiting the Soret effect — improved structure of eutectic alloy crystals  
[NASA-CASE-MFS-22926-1] c 24 N77-27187
- Directionally solidified eutectic gamma plus beta nickel-base superalloys  
[NASA-CASE-LEW-12906-1] c 26 N77-32279

## Nickel base alloy — for gas turbine engine stator vanes

- [NASA-CASE-LEW-12270-1] c 26 N77-32280
- Directionally solidified eutectic gamma-gamma nickel-base superalloys  
[NASA-CASE-LEW-12905-1] c 26 N78-18183
- Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 34 N81-22310
- Overlay metallic-cermet alloy coating systems — for gas turbine engines  
[NASA-CASE-LEW-13639-1] c 27 N82-33522
- HEAT SHIELDING**
- Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c 14 N69-27459
- Heat shield oven  
[NASA-CASE-XMS-04318] c 15 N69-27871
- Heat shield Patent  
[NASA-CASE-XMS-00486] c 33 N70-33344
- Sandwich panel construction Patent  
[NASA-CASE-XLA-00349] c 33 N70-37979
- Hypersonic reentry vehicle Patent  
[NASA-CASE-XMS-04142] c 31 N70-41631
- Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075
- Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c 06 N71-11242
- Synthesis of polymers schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243
- Lightweight refractory insulation and method of preparing the same Patent  
[NASA-CASE-XMF-05279] c 18 N71-16124
- Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145
- Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434
- Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MSC-12109] c 18 N71-26285
- Thermal insulation attaching means — adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221
- Thermal insulation protection means  
[NASA-CASE-MSC-12737-1] c 24 N79-25142
- Installing fiber insulation  
[NASA-CASE-MSC-16973-1] c 37 N81-14317
- Thermal barrier pressure seal — shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSC-18134-1] c 37 N81-15363
- High temperature silicon carbide impregnated insulating fabrics — filling the gaps between space shuttle tiles  
[NASA-CASE-MSC-18832-1] c 24 N82-26388
- Multilayer thermal protection system  
[NASA-CASE-LAR-12620-1] c 24 N82-32417
- Mechanical fastener  
[NASA-CASE-LAR-12738-1] c 18 N82-33419

## HEAT SINKS

- Thermal conductive connection and method of making same Patent  
[NASA-CASE-XMS-02087] c 09 N70-41717
- Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051
- Tubular sublimatory evaporator heat sink  
[NASA-CASE-ARC-10912-1] c 34 N77-19353
- Compact pulsed laser having improved heat conductance  
[NASA-CASE-NPO-13147-1] c 36 N77-25502
- Hypersonic airbreathing missile  
[NASA-CASE-LAR-12264-1] c 15 N78-32168
- Electroexplosive device  
[NASA-CASE-NPO-13858-1] c 28 N79-11231
- Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523
- Radiative cooler  
[NASA-CASE-NPO-15465-1] c 18 N82-10106

## HEAT SOURCES

- Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475
- Thermally cascaded thermoelectric generator  
[NASA-CASE-NPO-10753] c 03 N72-26031
- Protected isotope heat source — for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876
- Portable electrophoresis apparatus using minimum electrolyte  
[NASA-CASE-NPO-13274-1] c 25 N79-10183
- HEAT STORAGE**
- Solar energy trap  
[NASA-CASE-MFS-22744-1] c 44 N76-24696
- Thermal energy storage system — operating on superheating of liquids  
[NASA-CASE-MFS-23167-1] c 44 N76-31667

## HEAT TRANSFER

- Thermal switch Patent  
[NASA-CASE-XNP-00463] c 33 N70-36847
- Sandwich panel construction Patent  
[NASA-CASE-XLA-00349] c 33 N70-37979
- Apparatus for transferring cryogenic liquids Patent  
[NASA-CASE-XLE-00345] c 15 N70-38020
- Method of improving heat transfer characteristics in a nucleate boiling process Patent  
[NASA-CASE-XMS-04268] c 33 N71-16277
- Transmission line thermal short Patent  
[NASA-CASE-XNP-09775] c 09 N71-20445
- Heat sensing instrument Patent  
[NASA-CASE-XLA-01551] c 14 N71-22989
- Fluid phase analyzer Patent  
[NASA-CASE-NPO-10691] c 14 N71-26199
- Heat conductive resiliently compressible structure for space electronics package modules Patent  
[NASA-CASE-MSC-12389] c 33 N71-29052
- Space simulation and radiative property testing system and method Patent  
[NASA-CASE-MFS-20096] c 14 N71-30026
- Manually actuated heat pump  
[NASA-CASE-NPO-10677] c 05 N72-11084
- High intensity radiant energy pulse source having means for opening shutter when light flux has reached a desired level  
[NASA-CASE-ARC-10178-1] c 09 N72-17152
- Apparatus for sensing temperature  
[NASA-CASE-XLE-05230] c 14 N72-27410
- Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829
- Thermal flux transfer system  
[NASA-CASE-NPO-12070-1] c 28 N73-32606
- Electrostatically controlled heat shutter  
[NASA-CASE-NPO-11942-1] c 33 N73-32818
- Heat transfer device  
[NASA-CASE-NPO-11120-1] c 34 N74-18552
- Heat exchanger  
[NASA-CASE-MFS-22991-1] c 34 N77-10463
- Heat pipe with dual working fluids  
[NASA-CASE-ARC-10198] c 34 N78-17336
- Low cost cryostat  
[NASA-CASE-NPO-14513-1] c 35 N81-14287
- Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 34 N81-22310
- Heat exchanger and method of making  
[NASA-CASE-LEW-12441-3] c 44 N81-24519
- A stable density-stratification solar pond  
[NASA-CASE-NPO-15419-1] c 44 N81-27599
- Thermochemical generation of hydrogen  
[NASA-CASE-NPO-15015-1] c 25 N82-28368
- HEAT TRANSMISSION**
- Heat flow calorimeter — measures output of Ni-Cd batteries  
[NASA-CASE-GSC-11434-1] c 34 N74-27859
- Protected isotope heat source — for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876
- Heat transparent high intensity high efficiency solar cell  
[NASA-CASE-LEW-12892-1] c 44 N81-27598
- HEAT TREATMENT**
- High-speed infrared furnace  
[NASA-CASE-XLE-10466] c 17 N69-25147
- Heat shield oven  
[NASA-CASE-XMS-04318] c 15 N69-27871
- Method for molding compounds Patent  
[NASA-CASE-XLA-01091] c 15 N71-10672
- Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468
- Inorganic thermal control pigment Patent  
[NASA-CASE-XNP-02139] c 18 N71-24184
- Thermal compression bonding of interconnectors  
[NASA-CASE-GSC-10303] c 15 N72-22487
- Method of heat treating a formed powder product material  
[NASA-CASE-LEW-10805-3] c 26 N74-10521
- Diffusion welding — heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c 37 N74-21055
- Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c 54 N75-27761
- Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236
- Method for detecting pollutants — through chemical reactions and heat treatment  
[NASA-CASE-LAR-11405-1] c 45 N76-31714
- Method of producing complex aluminum alloy parts of high temper, and products thereof  
[NASA-CASE-MSC-19693-1] c 26 N78-24333
- Bakeable McLeod gauge  
[NASA-CASE-XGS-01293-1] c 35 N79-33450



Heat treat fixture and method of heat treating  
[NASA-CASE-LAR-11821-1] c 26 N80-28492

Hydrosulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 28 N82-12240

**HEATERS**  
Inherent redundancy electric heater  
[NASA-CASE-MFS-21462-1] c 33 N74-14935

**HEATING**  
System for preconditioning a combustible vapor  
[NASA-CASE-NPO-12072] c 28 N72-22772

Diffusion welding in air — solid state welding of butt joint by fusion welding, surface cleaning, and heating  
[NASA-CASE-LEW-11387-1] c 37 N74-18128

Heating and cooling system — for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 39 N80-25693

An improved synthesis of 2,4,8,10-tetroxaspiro (5.5) undecane  
[NASA-CASE-ARC-11243-2] c 23 N80-31472

**HEATING EQUIPMENT**  
Method and apparatus for controllably heating fluid  
Patent  
[NASA-CASE-XMF-04237] c 33 N71-16278

Electric arc apparatus Patent  
[NASA-CASE-XAC-01677] c 09 N71-20816

Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948

Self-cycling fluid heater  
[NASA-CASE-MSC-15567-1] c 33 N73-16918

Portable heatable container  
[NASA-CASE-NPO-14237-1] c 44 N80-20808

Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 33 N82-23396

**HELICAL ANTENNAS**  
Weatherproof helix antenna Patent  
[NASA-CASE-XKS-08485] c 07 N71-19493

Collapsible high gain antenna  
[NASA-CASE-KSC-10392] c 07 N73-26117

**HELICOPTER WAKES**  
Variable geometry rotor system  
[NASA-CASE-LAR-10557] c 02 N72-11018

**HELICOPTERS**  
Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c 05 N77-17029

Non-destructive method for applying and removing instrumentation on helicopter rotor blades  
[NASA-CASE-LAR-11201-1] c 35 N78-24515

Constant lift rotor for a heavier than air craft  
[NASA-CASE-ARC-11045-1] c 05 N79-17847

Helicopter rotor airfoil  
[NASA-CASE-LAR-12396-1] c 02 N79-24958

**HELIOSTATS**  
Solar tracking system  
[NASA-CASE-MFS-23999-1] c 44 N81-24520

**HELIUM**  
Helium refining by superfluidity Patent  
[NASA-CASE-XNP-00733] c 06 N70-34946

High pressure helium purifier Patent  
[NASA-CASE-XMF-06888] c 15 N71-24044

Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c 36 N76-29575

Cryostat system for temperatures on the order of 2 deg K or less  
[NASA-CASE-NPO-13459-1] c 31 N77-10229

Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029

**HELIUM HYDROGEN ATMOSPHERES**  
Method and means for helium/hydrogen ratio measurement by alpha scattering  
[NASA-CASE-NPO-14079-1] c 25 N80-20334

**HELIUM IONS**  
Charge transfer reaction laser with preionization means  
[NASA-CASE-NPO-13945-1] c 36 N78-27402

**HELIUM-NEON LASERS**  
Laser communication system for controlling several functions at a location remote to the laser  
[NASA-CASE-LAR-10311-1] c 16 N73-16536

Direction sensitive laser velocimeter — determining the direction of particles using a helium-neon laser  
[NASA-CASE-LAR-12177-1] c 36 N81-24422

**HELMETS**  
Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190

Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193

Venting device for pressurized space suit helmet Patent  
[NASA-CASE-XMS-09652-1] c 05 N71-26333

Helmet latching and attaching ring  
[NASA-CASE-XMS-04670] c 54 N78-17678

Protective garment ventilation system  
[NASA-CASE-XMS-04928] c 54 N78-17679

Helmet feedport  
[NASA-CASE-XMS-09653] c 54 N78-17680

Emergency space-suit helmet  
[NASA-CASE-MSC-10954-1] c 54 N78-18761

Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806

**HEMISPHERICAL SHELLS**  
Anti-glare improvement for optical imaging systems Patent  
[NASA-CASE-NPO-10337] c 14 N71-15604

**HERMETIC SEALS**  
Line cutter Patent  
[NASA-CASE-XGS-00824] c 15 N70-42017

Hermetically sealed explosive release mechanism Patent  
[NASA-CASE-XGS-00824] c 15 N71-16078

Traveling sealer for contoured table Patent  
[NASA-CASE-XLA-01494] c 15 N71-24164

Method for detecting leaks in hermetically sealed containers Patent  
[NASA-CASE-ERC-10045] c 15 N71-24910

Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243

Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312

Pressure seal Patent  
[NASA-CASE-NPO-10796] c 15 N71-27068

Tube sealing device Patent  
[NASA-CASE-NPO-10431] c 15 N71-29132

Hermetically sealed elbow actuator  
[NASA-CASE-MFS-14710] c 09 N72-22195

Heat transfer device  
[NASA-CASE-NPO-11120-1] c 34 N74-18552

Device for tensioning test specimens within an hermetically sealed chamber  
[NASA-CASE-MFS-23281-1] c 35 N77-22450

Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721

Hermetic seal for a shaft  
[NASA-CASE-NPO-15115-1] c 37 N82-24493

Moisture content and gas sampling device — to test hermetically sealed electronic equipment  
[NASA-CASE-MSC-18866-1] c 35 N82-26634

Hermetically sealable package for hybrid solid-state electronic devices and the like  
[NASA-CASE-MSC-20181-1] c 33 N82-28549

**HEXAGONS**  
Hexagon solar power panel  
[NASA-CASE-NPO-12148-1] c 44 N78-27515

**HEXAMETHYLENETETRAMINE**  
Structural wood panels with improved fire resistance  
[NASA-CASE-ARC-11174-1] c 24 N81-13999

**HEXOKINASE**  
Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487

**HIGH ACCELERATION**  
Universal pilot restraint suit and body support therefor Patent  
[NASA-CASE-XAC-00405] c 05 N70-41819

High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272

**HIGH ALTITUDE**  
Balanced bellows spirometer  
[NASA-CASE-XAR-01547] c 05 N69-21473

Sun sensing guidance system for high altitude aircraft  
[NASA-CASE-FRC-11052-1] c 04 N82-23231

**HIGH ALTITUDE BALLOONS**  
Thin film strain transducer — for strain monitoring of high altitude balloons  
[NASA-CASE-WLP-10055-1] c 35 N82-26632

**HIGH ALTITUDE ENVIRONMENTS**  
Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779

**HIGH ASPECT RATIO**  
Landing arrangement for aerial vehicles Patent  
[NASA-CASE-XLA-00142] c 02 N70-33286

Landing arrangement for aerial vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858

Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279

**HIGH FREQUENCIES**  
Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c 09 N69-24318

Holder for crystal resonators Patent  
[NASA-CASE-XNP-03637] c 15 N71-21311

Multiple varactor frequency doubler Patent  
[NASA-CASE-XMF-04958-1] c 10 N71-26414

Filtering technique based on high-frequency plant modeling for high-gain control  
[NASA-CASE-LAR-12215-1] c 08 N79-23097

**HIGH GAIN**  
Filtering technique based on high-frequency plant modeling for high-gain control  
[NASA-CASE-LAR-12215-1] c 08 N79-23097

**HIGH PASS FILTERS**  
Radio frequency coaxial high pass filter Patent  
[NASA-CASE-XGS-01418] c 09 N71-23573

**HIGH POLYMERS**  
Variable stiffness polymenc damper  
[NASA-CASE-XAC-11225] c 14 N69-27486

**HIGH POWER LASERS**  
Large volume multiple-path nuclear pumped laser  
[NASA-CASE-LAR-12592-1] c 36 N82-13415

Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418

High power metallic halide laser — amplifying a copper chloride laser  
[NASA-CASE-NPO-14782-1] c 36 N82-26616

**HIGH PRESSURE**  
High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817

High pressure four-way valve Patent  
[NASA-CASE-XNP-00214] c 15 N70-36908

High pressure filter Patent  
[NASA-CASE-XNP-00732] c 28 N70-41447

Antiflutter ball check valve Patent  
[NASA-CASE-XNP-01152] c 15 N70-41811

Liquid flow sight assembly Patent  
[NASA-CASE-XLE-02998] c 14 N70-42074

High pressure regulator valve Patent  
[NASA-CASE-XNP-00710] c 15 N71-10778

Hypersonic test facility Patent  
[NASA-CASE-XLA-00378] c 11 N71-15925

High pressure air valve Patent  
[NASA-CASE-MSC-11010] c 15 N71-19485

Valve seat with resilient support member Patent  
[NASA-CASE-XKS-02582] c 15 N71-21234

High pressure helium purifier Patent  
[NASA-CASE-XMF-06888] c 15 N71-24044

Liquid aerosol dispenser  
[NASA-CASE-MFS-20829] c 12 N72-21310

Gas compression apparatus  
[NASA-CASE-MSC-14757-1] c 35 N78-10428

Purging means and method for Xenon arc lamps  
[NASA-CASE-NPO-11978] c 31 N78-17238

Shaft seal assembly for high speed and high pressure applications  
[NASA-CASE-LEW-11873-1] c 37 N79-22475

Surface conforming thermal/pressure seal — tail assemblies of space shuttle orbiters  
[NASA-CASE-MSC-18422-1] c 37 N82-16408

**HIGH RESOLUTION**  
High pulse rate high resolution optical radar system  
[NASA-CASE-MFS-11426] c 07 N73-26119

High resolution Fournier  
interferometer-spectrophotopolarimeter  
[NASA-CASE-NPO-13604-1] c 35 N76-31490

High resolution threshold photoelectron spectroscopy by electron attachment  
[NASA-CASE-NPO-14078-1] c 72 N80-14877

Interferometer — high resolution  
[NASA-CASE-NPO-14448-1] c 74 N81-29963

High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N82-24973

Correlation spectrometer having high resolution and multiplexing capability  
[NASA-CASE-NPO-15558-1] c 35 N82-26636

**HIGH SPEED**  
Balanced bellows spirometer  
[NASA-CASE-XAR-01547] c 05 N69-21473

High speed low level electrical stepping switch Patent  
[NASA-CASE-XAC-00060] c 09 N70-39915

Impact testing machine Patent  
[NASA-CASE-XNP-04817] c 14 N71-23225

Traversing probe Patent  
[NASA-CASE-XFR-02007] c 12 N71-24692

High speed rolling element bearing  
[NASA-CASE-LEW-10856-1] c 15 N72-22490

Two stage light gas-plasma projectile accelerator  
[NASA-CASE-MFS-22287-1] c 75 N76-14931

Selective data segment monitoring system — using shift registers  
[NASA-CASE-ARC-10899-1] c 60 N77-19760

Shaft seal assembly for high speed and high pressure applications  
[NASA-CASE-LEW-11873-1] c 37 N79-22475

High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N82-24973

**HIGH SPEED CAMERAS**  
Electrically-operated rotary shutter Patent  
[NASA-CASE-XNP-00637] c 14 N70-40273

**HIGH STRENGTH**  
Method of making fiber composites  
[NASA-CASE-LEW-10424-2-2] c 18 N72-25539



## HIGH STRENGTH ALLOYS

- High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-00726] c 17 N71-15644
- Low temperature aluminum alloy Patent  
[NASA-CASE-XMF-02786] c 17 N71-20743
- Method of producing refractory composites containing tantalum carbide, hafnium carbide, and hafnium boride Patent  
[NASA-CASE-XLE-03940] c 18 N71-26153
- Nickel base alloy  
[NASA-CASE-LEW-10874-1] c 17 N72-22535
- Cobalt-base alloy  
[NASA-CASE-LEW-10436-1] c 17 N73-32415
- High toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-3] c 26 N80-32484

## HIGH STRENGTH STEELS

- Prevention of hydrogen embrittlement of high strength steel by hydrazine compositions — by adding potassium hydroxide to hydrazine  
[NASA-CASE-NPO-12122-1] c 24 N76-14203
- Process for making a high toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-2] c 26 N79-22271

## HIGH TEMPERATURE

- High temperature heat source Patent  
[NASA-CASE-XLE-00490] c 33 N70-34545
- Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c 03 N71-12255
- Hypersonic test facility Patent  
[NASA-CASE-XLA-00378] c 11 N71-15925
- Method for fibering ceramic materials Patent  
[NASA-CASE-XNP-00597] c 18 N71-23088
- Induction furnace with perforated tungsten foil shielding Patent  
[NASA-CASE-XLE-04026] c 14 N71-23267
- Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312
- Method of making fiber composites  
[NASA-CASE-LEW-10424-2-2] c 18 N72-25539
- Method of forming superalloys  
[NASA-CASE-LEW-10805-1] c 15 N73-13465
- High temperature beryllium oxide capacitor  
[NASA-CASE-LEW-11938-1] c 33 N76-15373
- Low to high temperature energy conversion system  
[NASA-CASE-NPO-13510-1] c 44 N77-32581
- Thermocouples of molybdenum and indium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12174-2] c 35 N79-14346
- High thermal power density heat transfer — thermionic converters  
[NASA-CASE-LEW-12950-1] c 34 N82-11399

## HIGH TEMPERATURE AIR

- Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10612-1] c 12 N73-28144

## HIGH TEMPERATURE ENVIRONMENTS

- High-speed infrared furnace  
[NASA-CASE-XLE-10466] c 17 N69-25147
- Nickel-base alloy Patent  
[NASA-CASE-XLE-00283] c 17 N70-36616
- Strain sensor for high temperatures Patent  
[NASA-CASE-XNP-09205] c 14 N71-17657
- Trielectrode capacitive pressure transducer  
[NASA-CASE-ARC-10711-2] c 33 N76-21390
- Integrated structure vacuum tube  
[NASA-CASE-ARC-10445-1] c 31 N76-31365
- Installing fiber insulation  
[NASA-CASE-MSC-16973-1] c 37 N81-14317
- Corrosion resistant thermal barrier coating — protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188
- High temperature penetrator assembly with bayonet plug and ramp-activated lock  
[NASA-CASE-MSC-18526-1] c 37 N82-24494
- Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453

## HIGH TEMPERATURE FLUIDS

- Self-cycling fluid heater  
[NASA-CASE-MSC-15567-1] c 33 N73-16918
- High-temperature microphone system — for measuring pressure fluctuations in gases at high temperature  
[NASA-CASE-LAR-12375-1] c 32 N79-24203

## HIGH TEMPERATURE GASES

- Instrument for the quantitative measurement of radiation at multiple wave lengths Patent  
[NASA-CASE-XLE-00011] c 14 N70-41946
- Ablative resin Patent  
[NASA-CASE-XLE-05913] c 33 N71-14032
- Transient heat transfer gauge Patent  
[NASA-CASE-XNP-09802] c 33 N71-15641
- Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10578-1] c 12 N73-25262
- Isotope separation using metallic vapor lasers  
[NASA-CASE-NPO-13550-1] c 36 N77-26477

Start up system for hydrogen generator used with an internal combustion engine

- [NASA-CASE-NPO-13849-1] c 28 N80-10374
- Free-piston regenerative hot gas hydraulic engine  
[NASA-CASE-LEW-12274-1] c 37 N80-31790
- Curved film cooling admission tube  
[NASA-CASE-LEW-13174-1] c 34 N81-12363
- Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370
- Method and apparatus for strengthening boron fibers — high temperature oxidation  
[NASA-CASE-LEW-13826-1] c 24 N82-26385

## HIGH TEMPERATURE LUBRICANTS

- Method of making self lubricating fluoride-metal composite materials Patent  
[NASA-CASE-XLE-08511-2] c 18 N71-16105
- Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710
- Method of making bearing materials — self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11930-4] c 24 N79-17916

## HIGH TEMPERATURE PLASMAS

- Method and apparatus for producing a plasma Patent  
[NASA-CASE-XLA-00147] c 25 N70-34661

## HIGH TEMPERATURE PROPELLANTS

- Feed system for an ion thruster  
[NASA-CASE-NPO-10737] c 28 N72-11709

## HIGH TEMPERATURE RESEARCH

- Gas cooled high temperature thermocouple Patent  
[NASA-CASE-XLE-09475-1] c 33 N71-15568
- Light shield and infrared reflector for fatigue testing Patent  
[NASA-CASE-XLA-01782] c 14 N71-26136
- High temperature oxidation resistant cermet compositions  
[NASA-CASE-NPO-13666-1] c 27 N77-13217

## HIGH TEMPERATURE TESTS

- High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817
- High temperature testing apparatus Patent  
[NASA-CASE-XLE-00335] c 14 N70-35368
- Apparatus for positioning and loading a test specimen Patent  
[NASA-CASE-XLE-01300] c 15 N70-41993
- Heating and cooling system — for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 39 N80-25693
- Containerless high temperature calorimeter apparatus  
[NASA-CASE-MFS-23923-1] c 35 N81-19426

## HIGH VACUUM

- Sealing device for an electrochemical cell Patent  
[NASA-CASE-XGS-02630] c 03 N71-22974
- Vacuum evaporator with electromagnetic ion steering Patent  
[NASA-CASE-NPO-10331] c 09 N71-26701
- Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c 14 N73-30394
- Plasma cleaning device — designed for high vacuum environments  
[NASA-CASE-MFS-22906-1] c 75 N78-27913

## HIGH VACUUM ORBITAL SIMULATOR

- Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c 11 N71-18773

## HIGH VOLTAGES

- Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c 09 N69-21542
- High-voltage cable Patent  
[NASA-CASE-XNP-00738] c 09 N70-38201
- High voltage pulse generator Patent  
[NASA-CASE-MSC-12178-1] c 09 N71-13518
- High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c 09 N71-19516
- High voltage divider system Patent  
[NASA-CASE-XLE-02008] c 09 N71-21583
- High voltage distributor  
[NASA-CASE-GSC-11849-1] c 33 N76-16332
- Sustained arc ignition system  
[NASA-CASE-LEW-12444-1] c 33 N77-28385
- High voltage V-groove solar cell  
[NASA-CASE-LEW-13401-2] c 44 N82-24717
- High voltage planar multijunction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764

## HIGHWAYS

- Traffic survey system — using optical scanners  
[NASA-CASE-MFS-22631-1] c 66 N78-19888

## HINGES

- Foldable beam  
[NASA-CASE-LAR-12077-1] c 31 N81-25259
- Hinged strike aircraft control system  
[NASA-CASE-LAR-12860-1] c 05 N82-26278

Self-locking mechanical center joint — for space construction

- [NASA-CASE-LAR-12864-1] c 37 N82-29606
- Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 44 N82-29713

## HISTOGRAMS

- Data compression system  
[NASA-CASE-XNP-09785] c 08 N69-21928

## HOLDERS

- Water cooled contactor for anode in carbon arc mechanism  
[NASA-CASE-XMS-03700] c 15 N69-24266
- Quick disconnect latch and handle combination Patent  
[NASA-CASE-MFS-11132] c 15 N71-17649
- Holder for crystal resonators Patent  
[NASA-CASE-XNP-03637] c 15 N71-21311
- Adjustable force probe  
[NASA-CASE-MFS-20760] c 14 N72-33377
- Fifth wheel  
[NASA-CASE-FRC-10081-1] c 37 N77-14477
- Combined docking and grasping device  
[NASA-CASE-MFS-23088-1] c 37 N77-23483
- Plural output optometric sample cell and analysis system  
[NASA-CASE-NPO-10233-1] c 74 N78-33913
- Method and apparatus for holding two separate metal pieces together for welding  
[NASA-CASE-GSC-12318-1] c 37 N80-23655
- Fixture for environmental exposure of structural materials under compression  
[NASA-CASE-LAR-12602-1] c 35 N81-19429
- Compression test fixture  
[NASA-CASE-MSC-18723-1] c 39 N81-24470
- Head for high speed spinner having a vacuum chuck — holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482
- Scrubber for silicon wafers  
[NASA-CASE-NPO-15539-1] c 37 N82-11469
- Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441
- Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492
- Workpiece positioning vise  
[NASA-CASE-GSC-12762-1] c 37 N82-29604

## HOLE DISTRIBUTION (MECHANICS)

- Thermocouple installation  
[NASA-CASE-NPO-13540-1] c 35 N77-14409

## HOLE MOBILITY

- Depositing semiconductor films utilizing a thermal gradient  
[NASA-CASE-XKS-04614] c 15 N69-21460

## HOLLOW

- Dual membrane hollow fiber fuel cell and method of operating same  
[NASA-CASE-NPO-13732-1] c 44 N79-10513

## HOLLOW CATHODES

- Hydrogen hollow cathode ion source  
[NASA-CASE-LEW-12940-1] c 72 N80-33186

## HOLOGRAPHIC INTERFEROMETRY

- Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 35 N81-12386
- Method of and apparatus for double-exposure holographic interferometry  
[NASA-CASE-MFS-25405-1] c 35 N81-27459

## HOLOGRAPHY

- Focused image holography with extended sources Patent  
[NASA-CASE-ERC-10019] c 16 N71-15551
- Hybrid holographic system using reflected and transmitted object beams simultaneously Patent  
[NASA-CASE-MFS-20074] c 16 N71-15585
- Recording and reconstructing focused image holograms Patent  
[NASA-CASE-ERC-10017] c 16 N71-15567
- Method and means for recording and reconstructing holograms without use of a reference beam Patent  
[NASA-CASE-ERC-10020] c 16 N71-26154
- Multiple image storing system for high speed projectile holography  
[NASA-CASE-MFS-20596] c 14 N72-17324
- Holographic thin film analyzer  
[NASA-CASE-MFS-20823-1] c 16 N73-30476
- Method and apparatus for checking the stability of a setup for making reflection type holograms  
[NASA-CASE-MFS-21455-1] c 35 N74-15146
- Real time moving scene holographic camera system  
[NASA-CASE-MFS-21087-1] c 35 N74-17153
- Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c 35 N74-26946
- Holographic system for nondestructive testing  
[NASA-CASE-MFS-21704-1] c 35 N75-25124
- Real time, large volume, moving scene holographic camera system  
[NASA-CASE-MFS-22537-1] c 35 N75-27328



Holographic motion picture camera with Doppler shift compensation  
[NASA-CASE-MFS-22517-1] c 35 N76-18402

Optical process for producing classification maps from multispectral data  
[NASA-CASE-MSC-14472-1] c 43 N77-10584

**HOMING DEVICES**

Location identification system  
[NASA-CASE-ERC-10324] c 07 N72-25173

**HONEYCOMB CORES**

Method of making inflatable honeycomb Patent  
[NASA-CASE-XLA-03492] c 15 N71-22713

Method of forming shapes from planar sheets of thermosetting materials  
[NASA-CASE-NPO-11036] c 15 N72-24522

Honeycomb core structures of minimal surface tubule sections  
[NASA-CASE-ERC-10363] c 18 N72-25541

**HONEYCOMB STRUCTURES**

Method for making a heat insulating and ablative structure  
[NASA-CASE-XMS-01108] c 15 N69-24322

Inflatable honeycomb Patent  
[NASA-CASE-XLA-00204] c 32 N70-36536

Fluid flow control valve Patent  
[NASA-CASE-XLE-00703] c 15 N71-15967

Method and apparatus for making a heat insulating and ablative structure Patent  
[NASA-CASE-XMS-02009] c 33 N71-20834

Honeycomb panel and method of making same Patent  
[NASA-CASE-XMF-01402] c 18 N71-21651

Cryogenic thermal insulation Patent  
[NASA-CASE-XMF-05046] c 33 N71-28892

Honeycomb panels formed of minimal surface periodic tubule layers  
[NASA-CASE-ERC-10364] c 18 N72-25540

Bonding or repairing process  
[NASA-CASE-MSC-12357] c 15 N73-12489

Insert facing tool — manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MFS-21485-1] c 37 N74-25968

Vacuum pressure molding technique  
[NASA-CASE-LAR-10073-1] c 37 N76-24575

Honeycomb-laminate composite structure  
[NASA-CASE-ARC-10913-1] c 24 N78-15180

Method of making a composite sandwich lattice structure  
[NASA-CASE-LAR-11898-2] c 24 N78-17149

Low density bismaleimide-carbon microballoon composites  
[NASA-CASE-ARC-11040-1] c 24 N79-16915

Saltless solar pond  
[NASA-CASE-NPO-15808-1] c 44 N82-29714

**HORIZON SCANNERS**

Electromagnetic mirror drive system  
[NASA-CASE-XLA-03724] c 14 N69-27461

Multi-lobar scan horizon sensor Patent  
[NASA-CASE-XGS-00809] c 21 N70-35427

Attitude orientation of spin-stabilized space vehicles Patent  
[NASA-CASE-XLA-00281] c 21 N70-36943

Amplifier clamping circuit for horizon scanner Patent  
[NASA-CASE-XGS-01784] c 10 N71-20782

Horizon sensor with a plurality of fixedly positioned radiation compensated radiation sensitive detectors Patent  
[NASA-CASE-XNP-06957] c 14 N71-21088

Infrared horizon locator  
[NASA-CASE-LAR-10726-1] c 14 N73-20475

**HORIZONTAL SPACECRAFT LANDING**

Variable-geometry winged reentry vehicle Patent  
[NASA-CASE-XLA-00241] c 31 N70-37986

**HORIZONTAL TAIL SURFACES**

Translating horizontal tail Patent  
[NASA-CASE-XLA-08801-1] c 02 N71-11043

**HORN ANTENNAS**

Antenna beam-shaping apparatus Patent  
[NASA-CASE-XNP-00611] c 09 N70-35219

Parabolic reflector horn feed with spillover correction Patent  
[NASA-CASE-XNP-00540] c 09 N70-35382

Horn feed having overlapping apertures Patent  
[NASA-CASE-GSC-10452] c 07 N71-12396

Dual mode horn antenna Patent  
[NASA-CASE-XNP-01057] c 07 N71-15907

Multi-purpose antenna employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c 07 N72-25174

Horn antenna having V-shaped corrugated slots  
[NASA-CASE-LAR-11112-1] c 32 N76-15330

Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365

Reflex feed system for dual frequency antenna with frequency cutoff means  
[NASA-CASE-NPO-14022-1] c 32 N78-31321

Dual band combiner for horn antenna  
[NASA-CASE-NPO-14519-1] c 32 N80-23524

Collapsible corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539

Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278

**HOT CATHODES**

Ion thruster cathode  
[NASA-CASE-XLE-07087] c 06 N69-39889

**HOT CORROSION**

Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 34 N81-22310

**HOT PRESSING**

Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729

Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12619-1] c 37 N81-16470

**HOT WORKING**

Method for forming plastic materials Patent  
[NASA-CASE-XMS-05516] c 15 N71-17803

**HOT-WIRE ANEMOMETERS**

Metallic hot wire anemometer — for high speed wind tunnel tests  
[NASA-CASE-ARC-10911-1] c 35 N77-20400

Method for making a hot wire anemometer and product thereof  
[NASA-CASE-ARC-10900-1] c 35 N77-24454

**HOT-WIRE FLOWMETERS**

Hot wire liquid level detector for cryogenic fluids Patent  
[NASA-CASE-XLE-00454] c 23 N71-17802

Flow separation detector  
[NASA-CASE-ARC-11046-1] c 35 N78-14364

Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470

**HOUSINGS**

Sealed cabinetry Patent  
[NASA-CASE-MSC-12168-1] c 09 N71-18600

Open type urine receptacle  
[NASA-CASE-MSC-12324-1] c 05 N72-22093

Universal environment package with sectional component housing  
[NASA-CASE-KSC-10031] c 15 N72-22486

Gas flow control device  
[NASA-CASE-NPO-11479] c 15 N73-13462

Cryogenic gyroscope housing — with annular disks for gas spin-up  
[NASA-CASE-MFS-21136-1] c 35 N74-18323

Heat transfer device  
[NASA-CASE-NPO-11120-1] c 34 N74-18552

Deformable bearing seat  
[NASA-CASE-LEW-12527-1] c 37 N77-32500

**HOVERING**

Gravity stabilized flying vehicle Patent  
[NASA-CASE-MSC-12111-1] c 02 N71-11039

**HUGONIOT EQUATION OF STATE**

Determining particle density using known material Hugoniot curves  
[NASA-CASE-LAR-11059-1] c 76 N75-12810

**HULLS (STRUCTURES)**

Hydrofoil Patent  
[NASA-CASE-XLA-00229] c 12 N70-33305

**HUMAN BEINGS**

Skeletal stressing method and apparatus Patent  
[NASA-CASE-ARC-10100-1] c 05 N71-24738

Emergency escape system Patent  
[NASA-CASE-XKS-07814] c 15 N71-27067

**HUMAN BODY**

Mass measuring system Patent  
[NASA-CASE-XMS-03371] c 05 N70-42000

Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189

Garments for controlling the temperature of the body Patent  
[NASA-CASE-XMS-10269] c 05 N71-24147

Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MFS-21010-1] c 05 N73-30078

Method and system for in vivo measurement of bone tissue using a two level energy source  
[NASA-CASE-MSC-14276-1] c 52 N77-14737

**HUMAN FACTORS ENGINEERING**

Shock absorbing support and restraint means Patent  
[NASA-CASE-XMS-01240] c 05 N70-35152

Harness assembly Patent  
[NASA-CASE-MFS-14671] c 05 N71-12341

Multiple circuit switch apparatus with improved pivot actuator structure Patent  
[NASA-CASE-XAC-03777] c 10 N71-15909

Three-axis finger tip controller for switches Patent  
[NASA-CASE-XAC-02405] c 09 N71-16089

Extravehicular tunnel suit system Patent  
[NASA-CASE-MSC-12243-1] c 05 N71-24728

EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MSC-13282-1] c 05 N71-24729

Spacesuit mobility joints  
[NASA-CASE-ARC-11058-1] c 54 N78-31735

Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736

Apparatus and method of inserting a microelectrode in body tissue or the like using vibration means  
[NASA-CASE-NPO-13910-1] c 52 N79-27836

Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 54 N81-15699

Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-2] c 52 N81-25661

Urine collection apparatus — feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740

Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059

Thermal garment  
[NASA-CASE-XMS-03694-1] c 54 N82-29002

**HUMAN PERFORMANCE**

Color perception tester  
[NASA-CASE-KSC-10278] c 05 N72-16015

**HUMAN REACTIONS**

Reaction tester  
[NASA-CASE-MSC-13604-1] c 05 N73-13114

**HUMAN WASTES**

Reduced gravity fecal collector seat and unnaal  
[NASA-CASE-MFS-22102-1] c 54 N74-20725

Automatic biowaste sampling  
[NASA-CASE-MSC-14640-1] c 54 N76-14804

Absorbent product and articles made therefrom  
[NASA-CASE-MSC-18223-2] c 52 N82-26960

Absorbent product to absorb fluids — for collection of human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29362

**HUMIDITY**

Passive intrusion detection system  
[NASA-CASE-NPO-13804-1] c 33 N80-23559

Apparatus for supplying conditioned air at a substantially constant temperature and humidity  
[NASA-CASE-GSC-12191-1] c 31 N80-32583

**HYBRID CIRCUITS**

Hermetically sealable package for hybrid solid-state electronic devices and the like  
[NASA-CASE-MSC-20181-1] c 33 N82-28549

**HYBRID COMPUTERS**

Adaptive voting computer system  
[NASA-CASE-MSC-13932-1] c 62 N74-14920

**HYBRID PROPELLANTS**

Solid propellant liner Patent  
[NASA-CASE-XNP-09744] c 27 N71-16392

**HYDRAULIC CONTROL**

Shear modulated fluid amplifier Patent  
[NASA-CASE-MFS-10412] c 12 N71-17578

Multiple orifice throttle valve Patent  
[NASA-CASE-XNP-09698] c 15 N71-18580

Fluidic-thermochromic display device Patent  
[NASA-CASE-ERC-10031] c 12 N71-18603

Hydraulic transformer Patent  
[NASA-CASE-MFS-20830] c 15 N71-30028

Hydraulic drain means for servo-systems  
[NASA-CASE-NPO-10316-1] c 37 N77-22479

**HYDRAULIC EQUIPMENT**

Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c 11 N70-41677

Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604

Hydraulic drive mechanism Patent  
[NASA-CASE-XMS-03252] c 15 N71-10658

Anti-backlash circuit for hydraulic drive system Patent  
[NASA-CASE-XNP-01020] c 03 N71-12260

Hydraulic grip Patent  
[NASA-CASE-XLA-05100] c 15 N71-17696

Shock absorber Patent  
[NASA-CASE-XMS-03722] c 15 N71-21530

Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975

Energy limiter for hydraulic actuators Patent  
[NASA-CASE-ARC-10131-1] c 15 N71-27754

Mechanically limited, electrically operated hydraulic valve system for aircraft controls Patent  
[NASA-CASE-XAC-00048] c 02 N71-29128

Hydraulic transformer Patent  
[NASA-CASE-MFS-20830] c 15 N71-30028

Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c 03 N72-25021

Geysering inhibitor for vertical cryogenic transfer pipe  
[NASA-CASE-KSC-10615] c 15 N73-12486

Redundant hydraulic control system for actuators  
[NASA-CASE-MFS-20944] c 15 N73-13466

Combined pressure regulator and shutoff valve  
[NASA-CASE-NPO-13201-1] c 37 N75-15050

Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c 37 N75-25185

Filter regeneration systems — a system for regenerating a system filter in a fluid flow line  
[NASA-CASE-MSC-14273-1] c 34 N75-33342



- Quick disconnect filter coupling  
[NASA-CASE-MFS-22323-1] c 37 N76-14463
- Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735
- Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432
- A gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 37 N81-24445
- Underground mineral extraction  
[NASA-CASE-NPO-14140-1] c 43 N81-26509
- Tubing and cable cutting tool  
[NASA-CASE-LAR-12786-1] c 37 N82-20545
- HYDRAULIC FLUIDS**  
Free-piston regenerative hot gas hydraulic engine  
[NASA-CASE-LEW-12274-1] c 37 N80-31790
- HYDRAZINE ENGINES**  
Reciprocating engines  
[NASA-CASE-MSC-16239-1] c 37 N81-32510
- HYDRAZINE NITROFORM**  
Hydrazinium nitroformate propellant with saturated polymenc hydrocarbon binder  
[NASA-CASE-NPO-12015] c 27 N73-16764
- HYDRAZINES**  
Ignition means for monopropellant Patent  
[NASA-CASE-XNP-00876] c 28 N70-41311
- Solder flux which leaves corrosion-resistant coating Patent  
[NASA-CASE-XNP-03459-2] c 18 N71-15688
- Prevention of hydrogen embrittlement of high strength steel by hydrazine compositions — by adding potassium hydroxide to hydrazine  
[NASA-CASE-NPO-12122-1] c 24 N76-14203
- HYDROCARBON COMBUSTION**  
In-situ laser retorting of oil shale  
[NASA-CASE-LEW-12217-1] c 43 N78-14452
- HYDROCARBON FUEL PRODUCTION**  
Molten salt pyrolysis of latex — synthetic hydrocarbon fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261
- HYDROCARBON FUELS**  
Apparatus for making a metal slurry product Patent  
[NASA-CASE-XLE-00010] c 15 N70-33382
- Hydrogen nch gas generator  
[NASA-CASE-NPO-13342-2] c 44 N76-29700
- Hydrogen nch gas generator  
[NASA-CASE-NPO-13464-2] c 44 N76-29704
- HYDROCARBONS**  
Hydrazinium nitroformate propellant with saturated polymenc hydrocarbon binder  
[NASA-CASE-NPO-12015] c 27 N73-16764
- Hydrogen nch gas generator  
[NASA-CASE-NPO-13342-1] c 37 N76-16446
- Combustion engine — for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497
- Curable liquid hydrocarbon prepolymers containing hydroxyl groups and process for producing same  
[NASA-CASE-NPO-13137-1] c 27 N80-32514
- HYDROCHLORIC ACID**  
Indicator providing continuous indication of the presence of a specific pollutant in air  
[NASA-CASE-NPO-13474-1] c 45 N76-21742
- HYDROCRACKING**  
Autocatalytic coal liquefaction process  
[NASA-CASE-NPO-14876-2] c 28 N82-25394
- HYDROFOILS**  
Hydrofoil Patent  
[NASA-CASE-XLA-00229] c 12 N70-33305
- HYDROFORMING**  
Hydroforming techniques using epoxy molds Patent  
[NASA-CASE-XLE-05641-1] c 15 N71-26346
- HYDROGEN**  
Method for detecting hydrogen gas  
[NASA-CASE-XMF-03873] c 06 N69-39733
- Prevention of pressure build-up in electrochemical cells Patent  
[NASA-CASE-XGS-01419] c 03 N70-41864
- Pulse activated polarographic hydrogen detector Patent  
[NASA-CASE-XMF-06531] c 14 N71-17575
- Hydrogen leak detection device Patent  
[NASA-CASE-MFS-11537] c 14 N71-20442
- Analysis of hydrogen-deuterium mixtures  
[NASA-CASE-NPO-11322] c 06 N72-25146
- Hydrogen fire blink detector  
[NASA-CASE-MFS-15063] c 14 N72-25412
- Process for separation of dissolved hydrogen from water by use of palladium and process for coating palladium with palladium black  
[NASA-CASE-MSC-13335-1] c 06 N72-31140
- Atomic hydrogen maser with bulb temperature control to remove wall shift in maser output frequency  
[NASA-CASE-HQN-10654-1] c 16 N73-13489
- Method of producing a storage bulb for an atomic hydrogen maser  
[NASA-CASE-NPO-13050-1] c 36 N75-15029
- Atomic standard with variable storage volume  
[NASA-CASE-GSC-11895-1] c 35 N76-15436
- Hydrogen nch gas generator  
[NASA-CASE-NPO-13342-1] c 37 N76-16446
- Hydrogen-bromine secondary battery  
[NASA-CASE-NPO-13237-1] c 44 N76-18641
- Hydrogen-nch gas generator  
[NASA-CASE-NPO-13464-1] c 44 N76-18642
- Solar hydrogen generator  
[NASA-CASE-LAR-11361-1] c 44 N77-22607
- Solar photolysis of water  
[NASA-CASE-NPO-13675-1] c 44 N77-32580
- Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MSC-16777-1] c 51 N80-27067
- Method of cross-linking polyvinyl alcohol and other water soluble resins  
[NASA-CASE-LEW-13103-1] c 27 N80-32516
- State-of-charge coulometer  
[NASA-CASE-NPO-15759-1] c 35 N82-26630
- HYDROGEN ATOMS**  
Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-1] c 28 N78-24365
- Atomic hydrogen storage — cryotrapping and magnetic field strength  
[NASA-CASE-LEW-12081-2] c 28 N80-20402
- Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103
- HYDROGEN EMBRITTLEMENT**  
Prevention of hydrogen embrittlement of high strength steel by hydrazine compositions — by adding potassium hydroxide to hydrazine  
[NASA-CASE-NPO-12122-1] c 24 N76-14203
- HYDROGEN ENGINES**  
Hydrogen-fueled engine  
[NASA-CASE-NPO-13763-1] c 44 N78-33526
- HYDROGEN FUELS**  
Hydrogen nch gas generator  
[NASA-CASE-NPO-13342-2] c 44 N76-29700
- Hydrogen nch gas generator  
[NASA-CASE-NPO-13464-2] c 44 N76-29704
- Hydrogen-nch gas generator  
[NASA-CASE-NPO-13560-1] c 44 N77-10636
- HYDROGEN IONS**  
Hydrogen hollow cathode ion source  
[NASA-CASE-LEW-12940-1] c 72 N80-33186
- HYDROGEN OXYGEN FUEL CELLS**  
Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c 03 N71-11052
- Passively regulated water electrolysis rocket engine Patent  
[NASA-CASE-XGS-08729] c 28 N71-14044
- HYDROGEN PEROXIDE**  
Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504
- HYDROGEN PRODUCTION**  
Start up system for hydrogen generator used with an internal combustion engine  
[NASA-CASE-NPO-13849-1] c 28 N80-10374
- Thermochemical generation of hydrogen  
[NASA-CASE-NPO-15015-1] c 25 N82-28368
- HYDROGENATION**  
Production of high purity silicon carbide Patent  
[NASA-CASE-XLA-00158] c 26 N70-36805
- Compact hydrogenator  
[NASA-CASE-NPO-11682-1] c 35 N74-15127
- Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 28 N82-12240
- HYDROLOGY**  
Radar target for remotely sensing hydrological phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498
- HYDROLYSIS**  
Thermal control coatings based on trialkoxysilane hydrolysate binders — tolerance to ultraviolet radiation in vacuum  
[NASA-CASE-MFS-25620-1] c 24 N82-11118
- HYDROSTATICS**  
Hydrostatic bearing support  
[NASA-CASE-LEW-11158-1] c 37 N77-28486
- HYDROXIDES**  
Method for determining presence of OH in magnesium oxide  
[NASA-CASE-NPO-10774] c 06 N72-17095
- Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644
- HYDROXYL COMPOUNDS**  
Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174
- HYGIENE**  
Urine collection apparatus — feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740
- HYGROMETERS**  
Polymenc electrolytic hygrometer  
[NASA-CASE-NPO-13948-1] c 35 N78-25391
- HYGROSCOPICITY**  
Method of evaluating moisture barrier properties of encapsulating materials Patent  
[NASA-CASE-NPO-10051] c 18 N71-24934
- HYPERFINE STRUCTURE**  
Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142
- HYPERGOLIC ROCKET PROPELLANTS**  
Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c 28 N70-33375
- Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41992
- Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01988] c 27 N71-15634
- HYPERSONIC AIRCRAFT**  
Multistage aerospace craft — perspective drawings of conceptual design  
[NASA-CASE-XMF-02263] c 05 N74-10907
- HYPERSONIC FLIGHT**  
Hypersonic airbreathing missile  
[NASA-CASE-LAR-12264-1] c 15 N78-32168
- HYPERSONIC FLOW**  
Hypersonic test facility Patent  
[NASA-CASE-XLA-05378] c 11 N71-21475
- HYPERSONIC SPEED**  
Reentry vehicle leading edge Patent  
[NASA-CASE-XLA-00165] c 31 N70-33242
- Landing arrangement for aerospace vehicle Patent  
[NASA-CASE-XLA-00805] c 31 N70-38010
- Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691] c 31 N71-15674
- High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088
- Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10578-1] c 12 N73-25262
- Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10612-1] c 12 N73-28144
- HYPERSONIC VEHICLES**  
Techniques for insulating cryogenic fuel containers Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015
- HYPERSONIC WIND TUNNELS**  
A rectangular rod-wall sound shield  
[NASA-CASE-LAR-12883-1] c 09 N81-29138
- HYPERThERMA**  
Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996
- HYPERVELOCITY GUNS**  
Dust particle injector for hypervelocity accelerators Patent  
[NASA-CASE-XGS-06628] c 24 N71-16213
- Hypervelocity gun Patent  
[NASA-CASE-XAC-05902] c 11 N71-18578
- Collapsible pistons  
[NASA-CASE-MSC-13789-1] c 11 N73-32152
- Hypervelocity gun — using both electric and chemical energy for projectile propulsion  
[NASA-CASE-XLE-03186-1] c 09 N79-21084
- HYPERVELOCITY IMPACT**  
Method of and device for determining the characteristics and flux distribution of micrometeorites — scanning puncture holes in sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c 91 N74-13130
- HYPERVELOCITY PROJECTILES**  
Impact measuring technique  
[NASA-CASE-LAR-10913] c 14 N72-16282
- Multiple image storing system for high speed projectile holography  
[NASA-CASE-MFS-20596] c 14 N72-17324
- HYPERVELOCITY WIND TUNNELS**  
Hypersonic test facility Patent  
[NASA-CASE-XLA-00378] c 11 N71-15925
- Hypersonic test facility Patent  
[NASA-CASE-XLA-05378] c 11 N71-21475
- HYSTERESIS**  
Belleville spring assembly with elastic guides  
[NASA-CASE-XNP-09452] c 15 N69-27504
- IDENTIFYING**  
Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779
- IGNITERS**  
Solid propellant rocket motor  
[NASA-CASE-NPO-11559] c 28 N73-24784
- Remote fire stack igniter — with solenoid-controlled valve  
[NASA-CASE-MFS-21675-1] c 25 N74-33378



Molded composite pyrogen igniter for rocket motors — solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275

Plasma igniter for internal combustion engine  
[NASA-CASE-NPO-13828-1] c 37 N79-11405

**IGNITION**

Magnetically controlled plasma accelerator Patent  
[NASA-CASE-XLA-00327] c 25 N71-29184

**IGNITION LIMITS**

High voltage pulse generator Patent  
[NASA-CASE-MS-C-12178-1] c 09 N71-13518

**IGNITION SYSTEMS**

Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c 28 N70-33375

Ignition system for monopropellant combustion devices Patent  
[NASA-CASE-XNP-00249] c 28 N70-38249

Rocket motor system Patent  
[NASA-CASE-XLE-00323] c 28 N70-38505

Ignition means for monopropellant Patent  
[NASA-CASE-XNP-00876] c 28 N70-41311

Sustained arc ignition system  
[NASA-CASE-LEW-12444-1] c 33 N77-28385

**IGNITION TEMPERATURE**

Autoignition test cell Patent  
[NASA-CASE-KSC-10198] c 11 N71-28629

**ILLUMINATORS**

Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474

Illumination system including a virtual light source Patent  
[NASA-CASE-HQN-10781] c 23 N71-30292

Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N81-22894

**IMAGE CONTRAST**

Video signal enhancement system with dynamic range compression and modulation index expansion Patent  
[NASA-CASE-NPO-10343] c 07 N71-27341

Method and apparatus for producing an image from a transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932

**IMAGE CONVERTERS**

Deep trap, laser activated image converting system  
[NASA-CASE-NPO-13131-1] c 36 N75-19652

Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473

Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449

Photocapacitive image converter  
[NASA-CASE-LAR-12513-1] c 44 N82-32841

**IMAGE CORRELATORS**

Multiple hologram recording and readout system Patent  
[NASA-CASE-ERC-10151] c 16 N71-29131

Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014

Azimuth correlator for real-time synthetic aperture radar image processing  
[NASA-CASE-NPO-14019-1] c 32 N79-14268

An electro-optical Doppler tracker means and method for optical correlation of synthetic aperture radar data  
[NASA-CASE-NPO-14998-1] c 33 N81-15194

Optical signature generating and correlating apparatus  
[NASA-CASE-NPO-15226-1] c 74 N81-19899

**IMAGE DISSECTOR TUBES**

Apparatus for calibrating an image dissector tube  
[NASA-CASE-MFS-22208-1] c 33 N75-26244

Electronic optical transfer function analyzer  
[NASA-CASE-MFS-21672-1] c 74 N76-19935

**IMAGE ENHANCEMENT**

Method and means for an improved electron beam scanning system Patent  
[NASA-CASE-ERC-10552] c 09 N71-12539

Physical correction filter for improving the optical quality of an image  
[NASA-CASE-HQN-10542-1] c 74 N75-25706

Method of obtaining intensified image from developed photographic films and plates  
[NASA-CASE-MFS-23461-1] c 35 N79-10389

**IMAGE FILTERS**

Motion picture camera for optical pyrometry Patent  
[NASA-CASE-XLA-00062] c 14 N70-33254

Compact spectroradiometer  
[NASA-CASE-HQN-10683] c 14 N71-34389

Physical correction filter for improving the optical quality of an image  
[NASA-CASE-HQN-10542-1] c 74 N75-25706

**IMAGE INTENSIFIERS**

Magnifying image intensifier  
[NASA-CASE-GSC-12010-1] c 74 N78-18905

Method of obtaining intensified image from developed photographic films and plates  
[NASA-CASE-MFS-23461-1] c 35 N79-10389

**IMAGE PROCESSING**

Azimuth correlator for real-time synthetic aperture radar image processing  
[NASA-CASE-NPO-14019-1] c 32 N79-14268

Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342

**IMAGE RESOLUTION**

Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072

**IMAGE TUBES**

Image tube — deriving electron beam replica of image  
[NASA-CASE-GSC-11602-1] c 33 N74-21850

System for producing chroma signals  
[NASA-CASE-MS-C-14683-1] c 74 N77-18893

**IMAGES**

Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474

Stereoscopic television system and apparatus  
[NASA-CASE-ARC-10160-1] c 23 N72-27728

**IMAGING TECHNIQUES**

Optical mirror apparatus Patent  
[NASA-CASE-ERC-10001] c 23 N71-24868

Method and apparatus for eliminating coherent noise in a coherent energy imaging system without destroying spatial coherence  
[NASA-CASE-GSC-11133-1] c 23 N72-11568

Phototransistor imaging system  
[NASA-CASE-MFS-20609] c 23 N73-13660

Multispectral imaging system  
[NASA-CASE-MS-C-12404-1] c 23 N73-13661

Multiple pass remapping optical system  
[NASA-CASE-ARC-10194-1] c 23 N73-20741

Ritchey-Chretien Telescope  
[NASA-CASE-GSC-11487-1] c 14 N73-30393

Data storage, image tube type  
[NASA-CASE-MS-C-14053-1] c 60 N74-12888

Optical instruments  
[NASA-CASE-MS-C-14096-1] c 74 N74-15095

Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408

Method and apparatus for producing an image from a transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932

Full color hybrid display for aircraft simulators — landing aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083

Chromatically corrected virtual image display — lens design for flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N79-14892

Multispectral imaging and analysis system — using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288

System and method for obtaining wide screen Schlieren photographs  
[NASA-CASE-NPO-14174-1] c 74 N79-20856

Low intensity X-ray and gamma-ray imaging device — fiber optics  
[NASA-CASE-GSC-12263-1] c 74 N79-20857

Diffraction grating configuration for X-ray and ultraviolet focusing  
[NASA-CASE-GSC-12357-1] c 74 N80-21140

Multispectral scanner optical system  
[NASA-CASE-MS-C-18255-1] c 74 N80-33210

System for forming a quadrified image comprising angularly related fields of view of a three dimensional object  
[NASA-CASE-NPO-14219-1] c 74 N81-17886

Time delay and integration detectors using charge transfer devices  
[NASA-CASE-GSC-12324-1] c 33 N81-33403

Real-time 3D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N82-10862

Image readout device with electronically variable spatial resolution  
[NASA-CASE-LAR-12633-1] c 33 N82-24416

High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N82-24973

Method and apparatus for Delta K synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N82-28502

Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659

**IMIDES**

Imidazopyrrolone/imide copolymers Patent  
[NASA-CASE-XLA-08802] c 06 N71-11238

Molding process for imidazopyrrolone polymers  
[NASA-CASE-LAR-10547-1] c 31 N74-13177

Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N81-31364

**IMINES**

Synthesis of polymers schiff bases by schiff-base exchange reactions Patent  
[NASA-CASE-XMF-08651] c 06 N71-11236

Direct synthesis of polymers schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c 06 N71-11239

Synthesis of polymers schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243

Aromatic diamine-aromatic dialdehyde high molecular weight schiff base polymers prepared in a monofunctional schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740

**IMMOBILIZATION**

Stretching Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159

Absolute focus lock for microscopes  
[NASA-CASE-LAR-10184] c 14 N72-22445

Spine immobilization apparatus  
[NASA-CASE-ARC-11167-1] c 52 N81-25662

**IMPACT**

Impact energy absorbing system utilizing fractureable material  
[NASA-CASE-NPO-10671] c 15 N72-20443

Cosmic dust or other similar outer space particles impact location detector  
[NASA-CASE-GSC-11291-1] c 25 N72-33696

Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c 35 N75-27331

**IMPACT ACCELERATION**

Suspended mass impact damper Patent  
[NASA-CASE-LAR-10193-1] c 15 N71-27146

**IMPACT DAMAGE**

Micrometeoroid penetration measuring device Patent  
[NASA-CASE-XLA-00941] c 14 N71-23240

**IMPACT LOADS**

Force transducer Patent  
[NASA-CASE-XAC-01101] c 14 N70-41957

Impact testing machine Patent  
[NASA-CASE-XNP-04817] c 14 N71-23225

**IMPACT RESISTANCE**

Electric storage battery  
[NASA-CASE-NPO-11021] c 03 N72-20032

Hybrid composite laminate structures  
[NASA-CASE-LEW-12118-1] c 24 N77-27188

**IMPACT STRENGTH**

High impact pressure regulator Patent  
[NASA-CASE-NPO-10175] c 14 N71-18625

**IMPACT TESTING MACHINES**

Lunar penetrometer Patent  
[NASA-CASE-XLA-00934] c 14 N71-22765

Impact testing machine Patent  
[NASA-CASE-XNP-04817] c 14 N71-23225

**IMPACT TOLERANCES**

High impact antenna Patent  
[NASA-CASE-NPO-10231] c 07 N71-26101

Vehicular impact absorption system  
[NASA-CASE-NPO-14014-1] c 37 N79-10420

**IMPEDANCE MATCHING**

Signal multiplexer  
[NASA-CASE-XGS-01110] c 07 N69-24334

Reflectorometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c 07 N71-11267

Radio frequency coaxial high pass filter Patent  
[NASA-CASE-XGS-01418] c 09 N71-23573

Traxial antenna Patent  
[NASA-CASE-XGS-02290] c 07 N71-28809

**IMPEDANCE MEASUREMENT**

High impedance measuring apparatus Patent  
[NASA-CASE-XMS-08589-1] c 09 N71-20569

Apparatus for measuring semiconductor device resistance  
[NASA-CASE-NPO-14424-1] c 33 N80-32650

**IMPLANTATION**

Telemeter adaptable for implanting in an animal Patent  
[NASA-CASE-XAC-05706] c 05 N71-12342

Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772

Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25640-1] c 52 N82-26962

**IMPLANTED ELECTRODES (BIOLOGY)**

Pocket ECG electrode  
[NASA-CASE-ARC-11258-1] c 52 N80-33081

Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612

Implantable electrical device  
[NASA-CASE-GSC-12560-1] c 52 N82-29863

**IMPLOSIONS**

Hypervelocity gun Patent  
[NASA-CASE-XAC-05902] c 11 N71-18578

**IMPREGNATING**

Composite lamination method  
[NASA-CASE-LAR-12019-1] c 24 N78-17150

Insoluble polyelectrolyte and ion-exchange hollow fiber impregnated therewith  
[NASA-CASE-NPO-13530-1] c 25 N81-17187



High temperature silicon carbide impregnated insulating fabrics — filling the gaps between space shuttle tiles [NASA-CASE-MSC-18832-1] c 24 N82-26388

**IMPULSE GENERATORS**  
Percutaneous connector device [NASA-CASE-KSC-10849-1] c 52 N77-14738

**IMPURITIES**  
Method of making impurity-type semiconductor electrical contacts Patent [NASA-CASE-XMF-01016] c 26 N71-17818  
Method of mitigating titanium impurities effects in p-type silicon material for solar cells [NASA-CASE-NPO-14635-1] c 44 N80-24741  
Electromigration process for the purification of molten silicon during crystal growth [NASA-CASE-NPO-14831-1] c 76 N82-30105

**IN-FLIGHT MONITORING**  
System for use in conducting wake investigation for a wing in flight — differential pressure measurements for drag investigations [NASA-CASE-FRC-11024-1] c 02 N80-28300

**INCIDENCE**  
Method of and means for testing a glancing-incidence mirror system of an X-ray telescope [NASA-CASE-MFS-22409-2] c 74 N78-15880

**INCIDENT RADIATION**  
Solar cell assembly — for use under high intensity illumination [NASA-CASE-LEW-11549-1] c 44 N77-19571  
Correlation spectrometer having high resolution and multiplexing capability [NASA-CASE-NPO-15558-1] c 35 N82-26636

**INCLINATION**  
Hingeless helicopter rotor with improved stability [NASA-CASE-ARC-10807-1] c 05 N77-17029

**INCOHERENT SCATTERING**  
Rapidly pulsed, high intensity, incoherent light source [NASA-CASE-XLE-2529-3] c 33 N74-20859

**INDICATING INSTRUMENTS**  
Missile stage separation indicator and stage initiator Patent [NASA-CASE-XLA-00791] c 03 N70-39930  
Inductive liquid level detection system Patent [NASA-CASE-XLE-01609] c 14 N71-10500  
Apparatus for the determination of the existence or non-existence of a bonding between two members Patent [NASA-CASE-MFS-13686] c 15 N71-18132  
Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum [NASA-CASE-MFS-13130] c 10 N72-17173  
Fatigue failure load indicator [NASA-CASE-LAR-12027-1] c 39 N79-22537  
System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation [NASA-CASE-FRC-11005-1] c 06 N82-16075  
Film advance indicator [NASA-CASE-LAR-12474-1] c 35 N82-26628

**INDIUM ALLOYS**  
Method for attaching a fused-quartz mirror to a conductive metal substrate [NASA-CASE-MFS-23405-1] c 26 N77-29260  
Solar cell collector [NASA-CASE-LEW-12552-1] c 44 N78-25527

**INDUCTANCE**  
Current dependent filter inductance [NASA-CASE-ERC-10139] c 09 N72-17154  
Inductance device with vacuum insulation [NASA-CASE-LEW-10330-1] c 09 N72-27226  
Direct reading inductance meter [NASA-CASE-NPO-13792-1] c 35 N77-32455

**INDUCTION HEATING**  
Induction furnace with perforated tungsten foil shielding Patent [NASA-CASE-XLE-04026] c 14 N71-23267  
Apparatus for use in the production of ribbon-shaped crystals from a silicon melt [NASA-CASE-NPO-14297-1] c 33 N81-19389  
Induction heating gun [NASA-CASE-LAR-12540-2] c 27 N82-24345  
One-step dual purpose joining technique [NASA-CASE-LAR-12595-1] c 33 N82-26571

**INDUCTION MOTORS**  
Induction motor control system with voltage controlled oscillator circuit [NASA-CASE-MFS-21465-1] c 10 N73-32145  
Variable frequency inverter for ac induction motors with torque, speed and braking control [NASA-CASE-MFS-22088-1] c 33 N75-15874  
Power factor control system for AC induction motors [NASA-CASE-MFS-23280-1] c 33 N78-10376  
Three phase power factor controller [NASA-CASE-MFS-25535-1] c 33 N81-12330

Power factor control system for ac induction motors [NASA-CASE-MFS-23888-1] c 33 N81-27395  
Motor power factor controller with a reduced voltage starter [NASA-CASE-MFS-25586-1] c 33 N82-11360  
Control system for an induction motor with energy recovery [NASA-CASE-MFS-25477-1] c 33 N82-22437  
Magnetic field control — electromechanical torquing device [NASA-CASE-MFS-23828-1] c 33 N82-26569  
Trac failure detector [NASA-CASE-MFS-25607-1] c 33 N82-26574  
Solar powered actuator with continuously variable auxiliary power control [NASA-CASE-MFS-25637-1] c 44 N82-26780

**INDUCTORS**  
Inductive liquid level detection system Patent [NASA-CASE-XLE-01609] c 14 N71-10500  
Vacuum deposition apparatus Patent [NASA-CASE-XMF-01667] c 15 N71-17647  
Constant frequency output two stage induction machine systems Patent [NASA-CASE-ERC-10065] c 09 N71-27364  
Elimination of current spikes in buck power converters [NASA-CASE-NPO-14505-1] c 33 N81-19393

**INDUSTRIAL PLANTS**  
Process for making diamonds [NASA-CASE-MFS-20698-2] c 15 N73-19457

**INDUSTRIAL WASTES**  
Process of forming catalytic surfaces for wet oxidation reactions [NASA-CASE-MSC-14831-1] c 25 N78-10225  
Process for purification of waste water produced by a Kraft process pulp and paper mill [NASA-CASE-NPO-13847-2] c 85 N79-17747

**INERT ATMOSPHERE**  
Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere [NASA-CASE-MFS-23250-1] c 35 N82-11432

**INERTIA**  
Bidirectional step torque filter with zero backlash characteristic Patent [NASA-CASE-XGS-04227] c 15 N71-21744

**INERTIAL CONFINEMENT FUSION**  
Method and apparatus for producing concentric hollow spheres — for nuclear fusion by inertial confinement [NASA-CASE-NPO-14596-2] c 31 N82-25401  
Method and apparatus for producing concentric hollow spheres [NASA-CASE-NPO-14596-3] c 27 N82-26461

**INERTIAL GUIDANCE**  
Hermetic sealed vibration damper Patent [NASA-CASE-MSC-10959] c 15 N71-26243

**INERTIAL NAVIGATION**  
Autonomous navigation system — gyroscopic pendulum for air navigation [NASA-CASE-ARC-11257-1] c 04 N81-21047

**INERTIAL PLATFORMS**  
Clamping assembly for inertial components Patent [NASA-CASE-XMS-02184] c 15 N71-20813  
Azimuth laying system Patent [NASA-CASE-XMF-01669] c 21 N71-23289  
Temperature compensated digital inertial sensor — circuit for maintaining inertial element of gyroscope or accelerometer at constant position [NASA-CASE-NPO-13044-1] c 35 N74-15094  
Attitude control system [NASA-CASE-MFS-22787-1] c 15 N77-10113  
Rim inertial measuring system [NASA-CASE-LAR-12052-1] c 18 N81-29152

**INERTIAL REFERENCE SYSTEMS**  
Attitude control system Patent [NASA-CASE-XGS-04393] c 21 N71-14159  
Inertial reference apparatus Patent [NASA-CASE-XAC-03107] c 23 N71-16098

**INFLATABLE SPACECRAFT**  
Thermal control of space vehicles Patent [NASA-CASE-XLA-01291] c 33 N70-36617  
Passive communication satellite Patent [NASA-CASE-XLA-00210] c 30 N70-40309  
Rotating mandrel for assembly of inflatable devices Patent [NASA-CASE-XLA-04143] c 15 N71-17687  
Method of making an inflatable panel Patent [NASA-CASE-XLA-03497] c 15 N71-23052  
Orbital escape device Patent [NASA-CASE-XMS-06162] c 31 N71-28851

**INFLATABLE STRUCTURES**  
Aeroflexible structures [NASA-CASE-XLA-06095] c 01 N69-39981  
Life raft Patent [NASA-CASE-XMS-00863] c 05 N70-34857  
Life preserver Patent [NASA-CASE-XMS-00864] c 05 N70-36493

Inflatable honeycomb Patent [NASA-CASE-XLA-00204] c 32 N70-36536  
Inflatable radar reflector unit Patent [NASA-CASE-XMS-00893] c 07 N70-40063  
Excessive temperature warning system Patent [NASA-CASE-XLA-01926] c 14 N71-15620  
Inflation system for balloon type satellites Patent [NASA-CASE-XGS-03351] c 31 N71-16081  
Aerodynamic protection for space flight vehicles Patent [NASA-CASE-XNP-02507] c 31 N71-17679  
Self supporting space vehicle Patent [NASA-CASE-XLA-00117] c 31 N71-17680  
Conforming polisher for aspheric surface of revolution Patent [NASA-CASE-XGS-02884] c 15 N71-22705  
Method of making inflatable honeycomb Patent [NASA-CASE-XLA-03492] c 15 N71-22713  
Collapsible antenna boom and transmission line Patent [NASA-CASE-MFS-20068] c 07 N71-27191  
Inflatable tether Patent [NASA-CASE-XMS-10993] c 15 N71-28936  
Inflatable transpiration cooled nozzle [NASA-CASE-MFS-20619] c 28 N72-11708  
Modification of one man life raft [NASA-CASE-LAR-10241-1] c 54 N74-14845  
Emergency space-suit helmet [NASA-CASE-MSC-10954-1] c 54 N78-18761  
Pressure control valve — inflating flexible bladders [NASA-CASE-ARC-11251-1] c 37 N81-17433  
Pneumatic inflatable end effector [NASA-CASE-MFS-23696-1] c 54 N81-26718  
Inflatable device for installing strain gage bridges [NASA-CASE-FRC-11068-1] c 35 N82-24473

**INFORMATION RETRIEVAL**  
Multiple hologram recording and readout system Patent [NASA-CASE-ERC-10151] c 16 N71-29131

**INFRARED DETECTORS**  
Temperature sensitive capacitor device [NASA-CASE-XNP-09750] c 14 N69-39937  
Sight switch using an infrared source and sensor Patent [NASA-CASE-XMF-03934] c 09 N71-22985  
Infrared detectors [NASA-CASE-LAR-10728-1] c 14 N73-12445  
Doped Josephson tunneling junction for use in a sensitive IR detector [NASA-CASE-NPO-13348-1] c 33 N75-31332  
Multispectral scanner optical system [NASA-CASE-MSC-18255-1] c 74 N80-33210  
Refrigerator module, system and process — regenerative, cryogenic cooling of an infrared radiation detection system [NASA-CASE-ARC-11263-1] c 31 N81-27328

**INFRARED INSTRUMENTS**  
Infrared scanner Patent [NASA-CASE-XLA-00120] c 21 N70-33181

**INFRARED INTERFEROMETERS**  
Over-under double-pass interferometer [NASA-CASE-NPO-13999-1] c 35 N78-18395

**INFRARED LASERS**  
Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver [NASA-CASE-NPO-11919-1] c 35 N74-11284  
Gregorian all-reflective optical system [NASA-CASE-GSC-12058-1] c 74 N77-26942  
Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode [NASA-CASE-GSC-12168-1] c 31 N79-17029

**INFRARED RADIATION**  
High-speed infrared furnace [NASA-CASE-XLE-10466] c 17 N69-25147  
High field CdS detector for infrared radiation [NASA-CASE-LAR-11027-1] c 35 N74-18088

**INFRARED REFLECTION**  
Electromagnetic radiation energy arrangement — coatings for solar energy absorption and infrared reflection [NASA-CASE-WOO-00428-1] c 32 N79-19186

**INFRARED SCANNERS**  
Infrared scanner Patent [NASA-CASE-XLA-00120] c 21 N70-33181  
Infrared horizon locator [NASA-CASE-LAR-10726-1] c 14 N73-20475

**INFRARED SPECTRA**  
Diatomic infrared gasdynamic laser — for producing different wavelengths [NASA-CASE-ARC-10370-1] c 36 N75-31426

**INFRARED SPECTROMETERS**  
Telespectrograph Patent [NASA-CASE-XLA-03273] c 14 N71-18699



Cooled echelle grating spectrometer --- for space telescope applications  
[NASA-CASE-NPO-14372-1] c 35 N80-26635

**INFRARED SPECTROSCOPY**  
Apparatus for providing a servo drive signal in a high-speed stepping interferometer  
[NASA-CASE-NPO-13569-2] c 35 N79-14348

**INFRASONIC FREQUENCIES**  
Resonant infrasonic gauging apparatus  
[NASA-CASE-MSC-11847-1] c 14 N72-11363

**INGOTS**  
Improved ingot slicing machine  
[NASA-CASE-NPO-15483-1] c 37 N82-28642

**INHIBITORS**  
Inhibited solid propellant composition containing beryllium hydride  
[NASA-CASE-NPO-10866-1] c 28 N79-14228

**INITIATORS (EXPLOSIVES)**  
Missile stage separation indicator and stage initiator Patent  
[NASA-CASE-XLA-00791] c 03 N70-39930  
Safe-arm initiator Patent  
[NASA-CASE-LAR-10372] c 09 N71-18599  
Electroexplosive device  
[NASA-CASE-NPO-13858-1] c 28 N79-11231

**INJECTION**  
Thickness measuring and injection device Patent  
[NASA-CASE-MFS-20261] c 14 N71-27005  
High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523

**INJECTORS**  
Rocket propellant injector Patent  
[NASA-CASE-XLE-00103] c 28 N70-33241  
Rocket engine injector Patent  
[NASA-CASE-XLE-00111] c 28 N70-38199  
Injector for bipropellant rocket engines Patent  
[NASA-CASE-XMF-00148] c 28 N70-38710  
Dust particle injector for hypervelocity accelerators Patent  
[NASA-CASE-XGS-06628] c 24 N71-16213  
Control valve and co-axial variable injector Patent  
[NASA-CASE-XNP-09702] c 15 N71-17654  
Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736  
Bipropellant injector  
[NASA-CASE-XNP-09461] c 28 N72-23809  
Coaxial injector for reaction motors  
[NASA-CASE-NPO-11095] c 15 N72-25455  
Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c 15 N73-27406  
Rocket injector head  
[NASA-CASE-XMF-04592-1] c 20 N79-21125

**INLET FLOW**  
High pressure four-way valve Patent  
[NASA-CASE-XNP-00214] c 15 N70-36908  
Gas turbine combustor Patent  
[NASA-CASE-LEW-10286-1] c 28 N71-28915  
Airflow control system for supersonic inlets  
[NASA-CASE-LEW-11188-1] c 02 N74-20646  
Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270  
Shock position sensor for supersonic inlets --- measuring pressure in the throat of a supersonic inlet  
[NASA-CASE-LEW-11915-1] c 35 N76-14431  
Method for fabricating a mass spectrometer inlet leak  
[NASA-CASE-GSC-12077-1] c 35 N77-24455  
Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089  
Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976

**INLET NOZZLES**  
Rocket injector head  
[NASA-CASE-XMF-04592-1] c 20 N79-21125

**INLET PRESSURE**  
Fluid jet amplifier  
[NASA-CASE-XLE-03512] c 12 N69-21466  
Shock position sensor for supersonic inlets --- measuring pressure in the throat of a supersonic inlet  
[NASA-CASE-LEW-11915-1] c 35 N76-14431

**INOCULATION**  
Automatic inoculating apparatus --- includes movable carriage, drive motor, and swabbing motor  
[NASA-CASE-LAR-11074-1] c 51 N75-13502

**INORGANIC COATINGS**  
Diffuse reflective coating  
[NASA-CASE-GSC-11214-1] c 06 N73-13128  
Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233

**INORGANIC COMPOUNDS**  
Method of making membranes  
[NASA-CASE-XNP-04264] c 03 N69-21337

Inorganic solid film lubricants Patent  
[NASA-CASE-XMF-03988] c 15 N71-21403  
Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739  
Inorganic thermal control coatings  
[NASA-CASE-MFS-20011] c 18 N72-22566  
Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530  
Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910

**INORGANIC PEROXIDES**  
Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229  
Process for the preparation of calcium superoxide  
[NASA-CASE-ARC-11053-1] c 25 N79-10162

**INPUT**  
Remodulator filter Patent  
[NASA-CASE-NPO-10198] c 09 N71-24806  
Active RC networks  
[NASA-CASE-ARC-10020] c 10 N72-17172  
High-speed multiplexing of keyboard data inputs  
[NASA-CASE-NPO-14554-1] c 60 N81-27814

**INPUT/OUTPUT ROUTINES**  
Analog to digital converter  
[NASA-CASE-NPO-13385-1] c 33 N76-18345

**INSERTION**  
Apparatus and method of inserting a microelectrode in body tissue or the like using vibration means  
[NASA-CASE-NPO-13910-1] c 52 N79-27836

**INSERTION LOSS**  
Insertion loss measuring apparatus having transformer means connected across a pair of bolometers Patent  
[NASA-CASE-XNP-01193] c 10 N71-16057

**INSPECTION**  
Automatic visual inspection system for microelectronics  
[NASA-CASE-NPO-13282] c 38 N78-17396  
Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330

**INSTALLING**  
Device for installing rocket engines  
[NASA-CASE-MFS-19220-1] c 20 N76-22296  
Thermocouple installation  
[NASA-CASE-NPO-13540-1] c 35 N77-14409  
Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N82-24473  
A method and technique for installing light-weight fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-18934-3] c 24 N82-26387

**INSTRUMENT ERRORS**  
Radiation direction detector including means for compensating for photocell aging Patent  
[NASA-CASE-XLA-00183] c 14 N70-40239

**INSTRUMENT FLIGHT RULES**  
Controlled visibility device for an aircraft Patent  
[NASA-CASE-XFR-04147] c 11 N71-10748  
Inflight IFR procedures simulator  
[NASA-CASE-KSC-11218-1] c 09 N82-29331

**INSTRUMENT ORIENTATION**  
Plurality of photosensitive cells on a pyramidal base for planetary trackers  
[NASA-CASE-XNP-04180] c 07 N69-39736  
Azimuth laying system Patent  
[NASA-CASE-XMF-01669] c 21 N71-23289  
Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673  
Solar energy powered heliotrope  
[NASA-CASE-GSC-10945-1] c 21 N72-31637

**INSTRUMENT PACKAGES**  
Apparatus for ejection of an instrument cover  
[NASA-CASE-XMF-04132] c 15 N69-27502  
Method and apparatus for shock protection Patent  
[NASA-CASE-XLA-00482] c 15 N70-38409  
Foam generator Patent  
[NASA-CASE-XLA-00838] c 03 N70-36778  
Velocity package Patent  
[NASA-CASE-XLA-01339] c 31 N71-15692  
Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c 14 N71-20461  
Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523

**INSTRUMENTS**  
Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436  
Linear differential pressure sensor Patent  
[NASA-CASE-XMF-01974] c 14 N71-22752  
Precision thrust gage Patent  
[NASA-CASE-XGS-02319] c 14 N71-22965  
Self-calibrating displacement transducer Patent  
[NASA-CASE-XLA-00781] c 09 N71-22999  
Sensing probe  
[NASA-CASE-LEW-10281-1] c 14 N72-17327

Scientific experiment flexible mount  
[NASA-CASE-MSC-12372-1] c 31 N72-25842  
Magnetic suspension and pointing system  
[NASA-CASE-LAR-11889-2] c 37 N78-27424  
Rotary leveling base platform  
[NASA-CASE-ARC-10981-1] c 37 N78-27425

**INSULATED STRUCTURES**  
Piping arrangement through a double chamber structure  
[NASA-CASE-XNP-08882] c 15 N69-39935

**INSULATION**  
Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193  
Foamed in place ceramic refractory insulating material Patent  
[NASA-CASE-XGS-02435] c 18 N71-22998  
Method of removing insulated material from insulated wires  
[NASA-CASE-FRC-10038] c 15 N72-20444  
Inductance device with vacuum insulation  
[NASA-CASE-LEW-10330-1] c 09 N72-27226  
Insulated electrocardiographic electrodes --- without paste electrolyte  
[NASA-CASE-MSC-14339-1] c 05 N75-24716  
Silica reusable surface insulation  
[NASA-CASE-ARC-10721-1] c 27 N76-22376  
Two-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-1] c 27 N76-22377  
Three-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c 27 N76-23426  
Field effect transistor and method of construction thereof  
[NASA-CASE-MFS-23312-1] c 33 N78-27326  
Cork-resin ablative insulation for complex surfaces and method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388

**INSULATORS**  
Electrostatic thruster with improved insulators Patent  
[NASA-CASE-XLE-01902] c 28 N71-10574  
High temperature resistant cermet and ceramic compositions --- for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302

**INTAKE SYSTEMS**  
Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c 28 N70-34788  
The engine air intake system  
[NASA-CASE-ARC-10761-1] c 07 N77-18154  
Fluid sampling device  
[NASA-CASE-GSC-12143-1] c 35 N77-32456  
Passive propellant system  
[NASA-CASE-MFS-23642-1] c 20 N80-10278  
Reciprocating engines  
[NASA-CASE-MSC-16239-1] c 37 N81-32510

**INTEGRATED CIRCUITS**  
Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897  
Pulse rise time and amplitude detector Patent  
[NASA-CASE-XMF-08804] c 09 N71-24717  
Method and apparatus for swept-frequency impedance measurements of welds  
[NASA-CASE-ARC-10176-1] c 15 N72-21464  
Integrated circuit including field effect transistor and cermet resistor  
[NASA-CASE-GSC-10835-1] c 09 N72-33205  
Derivation of a tangent function using an integrated circuit four-quadrant multiplier  
[NASA-CASE-MSC-13907-1] c 10 N73-26230  
Coaxial inverted geometry transistor having buried emitter  
[NASA-CASE-ARC-10330-1] c 09 N73-32112  
Integrated circuit package with lead structure and method of preparing the same  
[NASA-CASE-MFS-21374-1] c 33 N74-12951  
Integrated P-channel MOS gyrator  
[NASA-CASE-MFS-22343-1] c 33 N74-34638  
Four phase logic systems --- including integrated microcircuits  
[NASA-CASE-MSC-14240-1] c 33 N75-14957  
Integrable power gyrator --- with Z-matrix design using parallel transistors  
[NASA-CASE-MFS-22342-1] c 33 N75-30428  
Cross correlation anomaly detection system  
[NASA-CASE-NPO-13283] c 38 N78-17395  
Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N79-12321  
A general logic structure for custom LSI circuits  
[NASA-CASE-NPO-14410-1] c 33 N79-25314  
Method for analyzing radiation sensitivity of integrated circuits  
[NASA-CASE-NPO-14350-1] c 33 N80-14332  
Solar cell system having alternating current output  
[NASA-CASE-LEW-12806-2] c 44 N81-12542



Microwave integrated circuit for Josephson voltage standards  
 [NASA-CASE-MFS-23845-1] c 33 N81-17348

High stability amplifier  
 [NASA-CASE-GSC-12646-1] c 33 N81-32391

**INTEGRATORS**  
 Operational integrator Patent  
 [NASA-CASE-NPO-10230] c 09 N71-12520

Variable duration pulse integrator Patent  
 [NASA-CASE-XLA-01219] c 10 N71-23084

Variable width pulse integrator Patent  
 [NASA-CASE-XLA-03356] c 10 N71-23315

Feedback integrator with grounded capacitor Patent  
 [NASA-CASE-XAC-10607] c 10 N71-23669

High speed phase detector Patent  
 [NASA-CASE-XNP-01306-2] c 09 N71-24596

Adaptive control system for line-commutated inverters  
 [NASA-CASE-MFS-25209-1] c 33 N81-31480

**INTERFACIAL TENSION**  
 Passive propellant system  
 [NASA-CASE-MFS-23642-1] c 20 N80-10278

Sphere forming method and apparatus  
 [NASA-CASE-NPO-15070-1] c 31 N82-33567

**INTERFEROMETERS**  
 Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
 [NASA-CASE-XGS-03532] c 14 N71-17627

Incremental motion drive system Patent  
 [NASA-CASE-XNP-08897] c 15 N71-17694

Laser grating interferometer Patent  
 [NASA-CASE-XLA-04295] c 16 N71-24170

Fringe counter for interferometers Patent  
 [NASA-CASE-LAR-10204] c 14 N71-27215

Interferometer-polarimeter  
 [NASA-CASE-NPO-11239] c 14 N73-12446

Interferometric rotation sensor  
 [NASA-CASE-ARC-10278-1] c 14 N73-25463

High resolution Fourier interferometer-spectrophotopolarimeter  
 [NASA-CASE-NPO-13604-1] c 35 N76-31490

Apparatus for providing a servo drive signal in a high-speed stepping interferometer  
 [NASA-CASE-NPO-13569-2] c 35 N79-14348

Velocity servo for continuous scan Fourier interference spectrometer  
 [NASA-CASE-NPO-14093-1] c 35 N80-20563

Interferometric angle monitor  
 [NASA-CASE-GSC-12614-1] c 35 N81-12386

Interferometer  
 [NASA-CASE-NPO-14502-1] c 74 N81-17888

Dual-beam skin friction interferometer — portable equipment  
 [NASA-CASE-ARC-11354-1] c 36 N81-29415

Interferometer — high resolution  
 [NASA-CASE-NPO-14448-1] c 74 N81-29963

Optical gyroscope system  
 [NASA-CASE-NPO-14258-1] c 35 N81-33448

Low noise lead screw positioner  
 [NASA-CASE-NPO-15617-1] c 35 N82-33681

**INTERFEROMETRY**  
 Surface roughness measuring system — synthetic aperture radar measurements of ocean wave height and terrain peaks  
 [NASA-CASE-NPO-13862-1] c 35 N78-10391

Interferometric locating system  
 [NASA-CASE-NPO-14173-1] c 04 N80-32359

**INTERLAYERS**  
 Method of making a partial interlaminar separation composite system  
 [NASA-CASE-LAR-12065-2] c 24 N81-33235

**INTERMEDIATE FREQUENCIES**  
 Doppler radar having phase modulation of both transmitted and reflected return signals — ranging  
 [NASA-CASE-MSC-18675-1] c 32 N81-29312

**INTERMEDIATE FREQUENCY AMPLIFIERS**  
 Multichannel logarithmic RF level detector  
 [NASA-CASE-LAR-11021-1] c 32 N76-14321

**INTERMETALLICS**  
 Twisted multifilament superconductor  
 [NASA-CASE-LEW-11726-1] c 26 N73-26752

Synthesis of superconducting compounds by explosive compaction of powders  
 [NASA-CASE-MFS-20861-1] c 18 N73-32437

**INTERNAL COMBUSTION ENGINES**  
 Fuel injection pump for internal combustion engines Patent  
 [NASA-CASE-MSC-12139-1] c 28 N71-14058

Continuous detonation reaction engine Patent  
 [NASA-CASE-XMF-06926] c 28 N71-22983

System for preconditioning a combustible vapor  
 [NASA-CASE-NPO-12072] c 28 N72-22772

System for minimizing internal combustion engine pollution emission  
 [NASA-CASE-NPO-13402-1] c 37 N76-18457

Combustion engine — for air pollution control  
 [NASA-CASE-NPO-13671-1] c 37 N77-31497

Hydrogen-fueled engine  
 [NASA-CASE-NPO-13763-1] c 44 N78-33526

Plasma igniter for internal combustion engine  
 [NASA-CASE-NPO-13828-1] c 37 N79-11405

Indicated mean-effective pressure instrument  
 [NASA-CASE-LEW-12661-1] c 35 N79-14345

Start up system for hydrogen generator used with an internal combustion engine  
 [NASA-CASE-NPO-13849-1] c 28 N80-10374

Supercritical fuel injection system  
 [NASA-CASE-LEW-12990-1] c 07 N81-29129

Automatic compression adjusting mechanism for internal combustion engines  
 [NASA-CASE-MSC-18807-1] c 37 N81-29442

**INTERPLANETARY SPACE**  
 Heat shield Patent  
 [NASA-CASE-XMS-00486] c 33 N70-33344

RC networks and amplifiers employing the same  
 [NASA-CASE-XAC-05462-2] c 10 N72-17171

**INTERPLANETARY SPACECRAFT**  
 Transpirationally cooled heat ablation system Patent  
 [NASA-CASE-XMS-02677] c 31 N70-42075

**INTERPLANETARY TRAJECTORIES**  
 Means for visually indicating flight paths of vehicles between the Earth, Venus, and Mercury Patent  
 [NASA-CASE-XNP-00708] c 14 N70-35394

**INTRACRANIAL PRESSURE**  
 Induction powered biological radiosonde  
 [NASA-CASE-ARC-11120-1] c 52 N80-18691

**INTRAOCULAR PRESSURE**  
 Intra-ocular pressure normalization technique and equipment  
 [NASA-CASE-LEW-12955-1] c 52 N80-14684

Intra-ocular pressure normalization technique and equipment  
 [NASA-CASE-LEW-12723-1] c 52 N80-18690

**INTRAVEHICULAR ACTIVITY**  
 Space suit  
 [NASA-CASE-MSC-12609-1] c 05 N73-32012

**INTRAVENOUS PROCEDURES**  
 Biomedical flow sensor — intravenous procedures  
 [NASA-CASE-MSC-18761-1] c 52 N81-24717

**INTRUSION**  
 Passive intrusion detection system  
 [NASA-CASE-NPO-13804-1] c 33 N80-23559

**INVENTIONS**  
 Active notch filter network with variable notch depth, width and frequency  
 [NASA-CASE-FRC-11055-1] c 33 N80-29583

Ion-exchange hollow fibers  
 [NASA-CASE-NPO-13309-1] c 25 N81-19244

Waveguide cooling system  
 [NASA-CASE-NPO-15401-1] c 33 N81-29344

**INVERTED CONVERTERS (DC TO AC)**  
 Inverter ratio failure detector  
 [NASA-CASE-NPO-13160-1] c 35 N74-18090

Variable frequency inverter for ac induction motors with torque, speed and braking control  
 [NASA-CASE-MFS-22088-1] c 33 N75-15874

Solar cell system having alternating current output  
 [NASA-CASE-LEW-12806-2] c 44 N81-12542

Power converter  
 [NASA-CASE-FRC-11014-1] c 33 N82-18494

**INVERTERS**  
 Transient-compensated SCR inverter  
 [NASA-CASE-XLA-08507] c 09 N69-39984

Inverter oscillator with voltage feedback  
 [NASA-CASE-NPO-10760] c 09 N72-25254

Overload protection system for power inverter  
 [NASA-CASE-NPO-13872-1] c 33 N78-10377

Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
 [NASA-CASE-NPO-14000-1] c 33 N79-24254

Base drive for paralleled inverter systems  
 [NASA-CASE-NPO-14163-1] c 33 N81-14220

Adaptive control system for line-commutated inverters  
 [NASA-CASE-MFS-25209-1] c 33 N81-31480

Adaptive reference voltage generator for firing angle control of line-commutated inverters  
 [NASA-CASE-MFS-25215-1] c 33 N81-31481

Magnetic heading reference  
 [NASA-CASE-LAR-12638-1] c 44 N82-24716

**IODINE**  
 Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
 [NASA-CASE-NPO-10373] c 03 N71-18698

Simple method of making photovoltaic junctions Patent  
 [NASA-CASE-XNP-01960] c 09 N71-23027

Iodine generator for reclaimed water purification  
 [NASA-CASE-MSC-14632-1] c 54 N78-14784

**IODINE COMPOUNDS**  
 Perfluoroalkyl polytriazines containing pendent iododifluoromethyl groups  
 [NASA-CASE-ARC-11241-1] c 25 N81-14016

**IODINE ISOTOPES**  
 Production of high purity I-123  
 [NASA-CASE-LEW-10518-1] c 24 N72-33681

Method of producing I-123 — by bombardment of cesium causing spallation  
 [NASA-CASE-LEW-11390-2] c 25 N76-27383

Production of I-123  
 [NASA-CASE-LEW-11390-3] c 25 N76-29379

**ION ACCELERATORS**  
 Process for glass coating an ion accelerator grid Patent  
 [NASA-CASE-LEW-10278-1] c 15 N71-28582

**ION BEAMS**  
 Ion beam deflector Patent  
 [NASA-CASE-LEW-10689-1] c 28 N71-26173

Dispensing targets for ion beam particle generators  
 [NASA-CASE-NPO-13112-1] c 73 N74-26767

Sputtering holes with ion beamlets  
 [NASA-CASE-LEW-11646-1] c 20 N74-31269

Method of constructing dished ion thruster grids to provide hole array spacing compensation  
 [NASA-CASE-LEW-11876-1] c 20 N76-21276

Ion beam thruster shield  
 [NASA-CASE-LEW-12082-1] c 20 N77-10148

Targets for producing high purity I-123  
 [NASA-CASE-LEW-10518-3] c 25 N78-27226

Method of cold welding using ion beam technology  
 [NASA-CASE-LEW-12982-1] c 37 N81-19455

Ion beam textured graphite electrode plates — high efficiency electron tube devices  
 [NASA-CASE-LEW-12919-2] c 24 N82-26386

**ION CHARGE**  
 Quadrupole mass filter with means to generate a noise spectrum exclusive of the resonant frequency of the desired ions to deflect stable ions  
 [NASA-CASE-XNP-04231] c 14 N73-32325

**ION CONCENTRATION**  
 Deposition of alloy films — on irregularly shaped metal object  
 [NASA-CASE-LEW-11262-1] c 27 N74-13270

**ION CURRENTS**  
 System for monitoring the presence of neutrals in a stream of ions Patent  
 [NASA-CASE-XNP-02592] c 24 N71-20518

**ION CYCLOTRON RADIATION**  
 Ion and electron detector for use in an ICR spectrometer  
 [NASA-CASE-NPO-13479-1] c 35 N77-10492

**ION DENSITY (CONCENTRATION)**  
 Method and apparatus for measurement of trap density and energy distribution in dielectric films  
 [NASA-CASE-NPO-13443-1] c 76 N76-20994

**ION ENGINES**  
 Ion thruster cathode  
 [NASA-CASE-XLE-07087] c 06 N69-39889

High-vacuum condenser tank for ion rocket tests Patent  
 [NASA-CASE-XLE-00168] c 11 N70-33278

Ion thruster cathode Patent Application  
 [NASA-CASE-LEW-10814-1] c 28 N70-35422

Ion rocket Patent  
 [NASA-CASE-XLE-00376] c 28 N70-37245

Rocket engine Patent  
 [NASA-CASE-XLE-00342] c 28 N70-37980

Thrust dynamometer Patent  
 [NASA-CASE-XLE-00702] c 14 N70-40203

Apparatus for increasing ion engine beam density Patent  
 [NASA-CASE-XLE-00519] c 28 N70-41576

Double optic system for ion engine Patent  
 [NASA-CASE-XNP-02839] c 28 N70-41922

Electrostatic ion engine having a permanent magnetic circuit Patent  
 [NASA-CASE-XLE-01124] c 28 N71-14043

Electrostatic ion rocket engine Patent  
 [NASA-CASE-XLE-02066] c 28 N71-15661

System for monitoring the presence of neutrals in a stream of ions Patent  
 [NASA-CASE-XNP-02592] c 24 N71-20518

Construction and method of arranging a plurality of ion engines to form a cluster Patent  
 [NASA-CASE-XNP-02923] c 28 N71-23081

Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
 [NASA-CASE-XLE-04501] c 09 N71-23190

Ion engine casing construction and method of making same Patent  
 [NASA-CASE-XNP-06942] c 28 N71-23293

Ion thruster accelerator system Patent  
 [NASA-CASE-LEW-10106-1] c 28 N71-26642

Propellant feed isolator Patent  
 [NASA-CASE-LEW-10210-1] c 28 N71-26781



High efficiency ionizer assembly Patent  
[NASA-CASE-XNP-01954] c 28 N71-28850

Feed system for an ion thruster  
[NASA-CASE-NPO-10737] c 28 N72-11709

Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783

Single grid accelerator for an ion thruster  
[NASA-CASE-XLE-10453-2] c 28 N73-27699

Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310

Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c 20 N76-21276

**ION EXCHANGE MEMBRANE ELECTROLYTES**

Method of making membranes  
[NASA-CASE-XNP-04264] c 03 N69-21337

Ion-exchange membrane with platinum electrode assembly Patent  
[NASA-CASE-XMS-02063] c 03 N71-29044

Formulated plastic separators for soluble electrode cells — rubber-ion transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313

Insoluble polyelectrolyte and ion-exchange hollow fiber impregnated therewith  
[NASA-CASE-NPO-13530-1] c 25 N81-17187

Method of making formulated plastic separators for soluble electrode cells  
[NASA-CASE-LEW-12358-2] c 25 N82-21268

**ION EXCHANGE RESINS**

Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530

Dialysis system — using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687

Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076

**ION EXCHANGING**

Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076

Ion-exchange hollow fibers  
[NASA-CASE-NPO-13309-1] c 25 N81-19244

**ION EXTRACTION**

Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148

**ION IMPLANTATION**

Method of making V-MOS field effect transistors utilizing a two-step anisotropic etching and ion implantation  
[NASA-CASE-GSC-12515-1] c 33 N81-26360

**ION IRRADIATION**

Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437

**ION MOTION**

Ion mass spectrometer — exploring comet tails  
[NASA-CASE-NPO-15423-1] c 91 N82-25042

**ION PLATING**

Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524

**ION PROBES**

Ion microprobe mass spectrometer for analyzing fluid materials Patent  
[NASA-CASE-ERC-10014] c 14 N71-28863

**ION PROPULSION**

Variable thrust ion engine utilizing thermally decomposable solid fuel Patent  
[NASA-CASE-XMF-00923] c 28 N70-36802

Ion rocket Patent  
[NASA-CASE-XLE-00376] c 28 N70-37245

Rocket engine Patent  
[NASA-CASE-XLE-00342] c 28 N70-37980

Method of producing porous tungsten ionizers for ion rocket engines Patent  
[NASA-CASE-XLE-00455] c 28 N70-38197

Double optic system for ion engine Patent  
[NASA-CASE-XNP-02839] c 28 N70-41922

Electron bombardment ion engine Patent  
[NASA-CASE-XNP-04124] c 28 N71-21822

Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173

Ion thruster accelerator system Patent  
[NASA-CASE-LEW-10106-1] c 28 N71-26642

Feed system for an ion thruster  
[NASA-CASE-NPO-10737] c 28 N72-11709

Ion thruster  
[NASA-CASE-LEW-10770-1] c 28 N72-22770

Ion thruster magnetic field control  
[NASA-CASE-LEW-10835-1] c 28 N72-22771

Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310

Apparatus for forming dished ion thruster grids  
[NASA-CASE-LEW-11694-2] c 37 N76-14461

Anode for ion thruster  
[NASA-CASE-LEW-12048-1] c 20 N77-20162

Closed Loop solar array-ion thruster system with power control circuitry  
[NASA-CASE-LEW-12780-1] c 20 N79-20179

A dc to dc converter — raising battery voltage in an ion propulsion system  
[NASA-CASE-MFS-25430-1] c 33 N82-28550

**ION PUMPS**

Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c 35 N77-14406

**ION SOURCES**

Focussing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618

Multilayer porous ionizer Patent  
[NASA-CASE-XNP-04338] c 17 N71-23046

Ion thruster accelerator system Patent  
[NASA-CASE-LEW-10106-1] c 28 N71-26642

High efficiency ionizer assembly Patent  
[NASA-CASE-XNP-01954] c 28 N71-28850

Apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c 14 N72-29464

Sputtering holes with ion beamlets  
[NASA-CASE-LEW-11646-1] c 20 N74-31269

Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c 37 N75-19684

Miniature cyclotron resonance ion source using small permanent magnet  
[NASA-CASE-NPO-14324-1] c 72 N80-27163

Hydrogen hollow cathode ion source  
[NASA-CASE-LEW-12940-1] c 72 N80-33186

**ION TRAPS (INSTRUMENTATION)**

Method and apparatus for measurement of trap density and energy distribution in dielectric films  
[NASA-CASE-NPO-13443-1] c 76 N76-20994

**IONIC MOBILITY**

Solid electrolyte cell  
[NASA-CASE-NPO-15269-1] c 44 N82-29710

**IONIZATION**

MHD electrical generator  
[NASA-CASE-NPO-15399-1] c 75 N82-24079

**IONIZATION CHAMBERS**

Baseline stabilization system for ionization detector Patent  
[NASA-CASE-XNP-03128] c 10 N70-41991

Electron bombardment ion engine Patent  
[NASA-CASE-XNP-04124] c 28 N71-21822

A multichannel photoionization chamber for absorption analysis Patent  
[NASA-CASE-ERC-10044-1] c 14 N71-27090

Apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c 14 N72-29464

**IONIZATION GAGES**

Ionization vacuum gauge Patent  
[NASA-CASE-XNP-00646] c 14 N70-35666

Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090

Apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c 14 N72-29464

Ultrahigh vacuum measuring ionization gauge  
[NASA-CASE-XLA-05087] c 14 N73-30391

**IONIZATION POTENTIALS**

Field ionization electrodes Patent  
[NASA-CASE-ERC-10013] c 09 N71-26678

**IONIZED GASES**

Probes having ring and primary sensor at same potential to prevent collection of stray wall currents in ionized gases  
[NASA-CASE-XLE-00690] c 25 N69-39884

Transient heat transfer gauge Patent  
[NASA-CASE-XNP-09802] c 33 N71-15641

Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148

**IONIZERS**

Water management system and an electrolytic cell therefor Patent  
[NASA-CASE-MSC-10960-1] c 03 N71-24718

Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310

**IONIZING RADIATION**

High-voltage cable Patent  
[NASA-CASE-XNP-00738] c 09 N70-38201

Reinforced polyquinoxaline gasket and method of preparing the same — resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364-1] c 37 N74-18126

**IONOSPHERE**

Ionospheric battery Patent  
[NASA-CASE-XGS-01593] c 03 N70-35408

**IONOSPHERIC DISTURBANCES**

Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events  
[NASA-CASE-NPO-15430-1] c 46 N82-26890

**IONOSPHERIC ELECTRON DENSITY**

Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events  
[NASA-CASE-NPO-15430-1] c 46 N82-26890

**IONS**

Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477

**IRIDIUM**

Thermocouples of molybdenum and iridium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12174-2] c 35 N79-14346

**IRISES (MECHANICAL APERTURES)**

Active microwave inses and windows  
[NASA-CASE-LAR-10513-1] c 07 N72-25170

Thin film microwave ins  
[NASA-CASE-LAR-10511-1] c 09 N72-29172

**IRON ALLOYS**

Tantalum modified ferritic iron base alloys  
[NASA-CASE-LEW-12095-3] c 26 N78-18182

Process for making a high toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-2] c 26 N79-22271

High toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-3] c 26 N80-32484

Overlay metallic-cermet alloy coating systems — for gas turbine engines  
[NASA-CASE-LEW-13639-1] c 27 N82-33522

**IRON CHLORIDES**

Improved chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N82-22672

**IRON COMPOUNDS**

Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246

**IRRADIATION**

Solar sensor having coarse and fine sensing with matched preirradiated cells and method of selecting cells Patent  
[NASA-CASE-XLA-01584] c 14 N71-23269

Apparatus for obtaining isotropic irradiation of a specimen  
[NASA-CASE-MFS-20095] c 24 N72-11595

Production of pure metals  
[NASA-CASE-LEW-10906-1] c 25 N74-30502

Method for analyzing radiation sensitivity of integrated circuits  
[NASA-CASE-NPO-14350-1] c 33 N80-14332

Violet-violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments  
[NASA-CASE-MSC-16074-1] c 27 N80-26446

**IRRIGATION**

Solar-powered pump  
[NASA-CASE-NPO-13567-1] c 44 N76-29701

**ISOLATORS**

Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781

Positive isolation disconnect  
[NASA-CASE-MSC-16043-1] c 37 N79-11402

Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N81-24426

**ISOPROPYL ALCOHOL**

Highly fluorinated polymers  
[NASA-CASE-MFS-11492] c 06 N73-30102

**ISOTHERMAL LAYERS**

Isothermal cover with thermal reservoirs Patent  
[NASA-CASE-MFS-20355] c 33 N71-25353

**ISOTHERMAL PROCESSES**

Opto-mechanical subsystem with temperature compensation through isothermal design  
[NASA-CASE-GSC-12059-1] c 35 N77-27366

**ISOTOPE SEPARATION**

Isotope separation using metallic vapor lasers  
[NASA-CASE-NPO-13550-1] c 36 N77-26477

J

**JET AIRCRAFT**

Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c 28 N70-34788

Multiple pure tone elimination strut assembly — air breathing engines  
[NASA-CASE-FRC-11062-1] c 71 N82-16800

**JET AIRCRAFT NOISE**

Jet aircraft configuration Patent  
[NASA-CASE-XLA-00087] c 02 N70-33332



Noise suppressor --- for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418

Abating exhaust noises in jet engines  
[NASA-CASE-ARC-10712-1] c 07 N74-33218

Instrumentation for measurement of aircraft noise and sonic boom  
[NASA-CASE-LAR-11173-1] c 35 N75-19614

Cascade plug nozzle --- for jet noise reduction  
[NASA-CASE-LAR-11674-1] c 07 N76-18117

**JET AMPLIFIERS**  
Fluid jet amplifier  
[NASA-CASE-XLE-03512] c 12 N69-21466

Fluid jet amplifier Patent  
[NASA-CASE-XLE-09341] c 12 N71-28741

**JET BLAST EFFECTS**  
Single action separation mechanism Patent  
[NASA-CASE-XLA-00188] c 15 N71-22874

**JET CONTROL**  
Attitude control for spacecraft Patent  
[NASA-CASE-XNP-00294] c 21 N70-36938

**JET ENGINES**  
Absorptive splitter for closely spaced supersonic engine air inlets Patent  
[NASA-CASE-XLA-02865] c 28 N71-15563

Thrust dynamometer Patent  
[NASA-CASE-XLE-05260] c 14 N71-20429

Nacelle afterbody for jet engines Patent  
[NASA-CASE-XLA-10450] c 28 N71-21493

Welding blades to rotors  
[NASA-CASE-LEW-10533-1] c 15 N73-28515

Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270

Cascade plug nozzle --- for jet noise reduction  
[NASA-CASE-LAR-11674-1] c 07 N76-18117

The engine air intake system  
[NASA-CASE-ARC-10761-1] c 07 N77-18154

Stator rotor tools  
[NASA-CASE-MSG-16000-1] c 37 N78-24544

Electrical servo actuator bracket --- fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483

Diffuser/ejector system for a very high vacuum environment  
[NASA-CASE-MFS-15791-1] c 37 N82-33712

**JET EXHAUST**  
Jet exhaust noise suppressor  
[NASA-CASE-LEW-11286-1] c 07 N74-27490

Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089

Reduction of nitric oxide emissions from a combustor  
[NASA-CASE-ARC-10814-2] c 07 N80-26298

**JET FLAPS**  
Jet aircraft configuration Patent  
[NASA-CASE-XLA-00087] c 02 N70-33332

**JET FLOW**  
Two phase flow system with discrete impinging two-phase jets  
[NASA-CASE-NPO-11556] c 12 N72-25292

**JET MIXING FLOW**  
Rocket engine injector Patent  
[NASA-CASE-XLE-00111] c 28 N70-38199

**JET NOZZLES**  
Fluid jet amplifier  
[NASA-CASE-XLE-03512] c 12 N69-21466

Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629

Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c 35 N74-15093

**JET PROPULSION**  
Two dimensional wedge/translating shroud nozzle  
[NASA-CASE-LAR-11919-1] c 07 N78-27121

**JET THRUST**  
Control system for rocket vehicles Patent  
[NASA-CASE-XLA-01163] c 21 N71-15582

Reactance control system Patent  
[NASA-CASE-XMF-01598] c 21 N71-15583

Method and apparatus for rapid thrust increases in a turbofan engine  
[NASA-CASE-LEW-12971-1] c 07 N80-18039

**JETTISON SYSTEMS**  
Space capsule ejection assembly Patent  
[NASA-CASE-XMF-03169] c 31 N71-15675

Method and system for ejecting fairing sections from a rocket vehicle  
[NASA-CASE-GSC-10590-1] c 31 N73-14853

Explosively activated egress area  
[NASA-CASE-LAR-12624-1] c 03 N81-29107

**JIGS**  
Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c 37 N76-21554

Solar cell module assembly jig  
[NASA-CASE-XGS-00829-1] c 44 N79-19447

## JOINING

Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-3] c 07 N79-14096

**JOINTS (ANATOMY)**  
Space suit pressure stabilizer Patent  
[NASA-CASE-XLA-05332] c 05 N71-11194

Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11195

Omnidirectional joint Patent  
[NASA-CASE-XMS-09635] c 05 N71-24623

Orthotic arm joint --- for use in mechanical arms  
[NASA-CASE-MFS-21611-1] c 54 N75-12616

Rotational joint assembly for the prosthetic leg  
[NASA-CASE-KSC-11004-1] c 54 N77-30749

Spacesuit mobility knee joints  
[NASA-CASE-ARC-11058-2] c 54 N79-24651

**JOINTS (JUNCTIONS)**  
Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c 09 N69-21542

Elastic universal joint Patent  
[NASA-CASE-XNP-00416] c 15 N70-36947

Portable alignment tool Patent  
[NASA-CASE-XMF-01452] c 15 N70-41371

Pressure garment joint Patent  
[NASA-CASE-XMS-09636] c 05 N71-12344

Technique of elbow bending small jacketed transfer lines Patent  
[NASA-CASE-XNP-10475] c 15 N71-24679

Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-2] c 15 N71-26148

Frictionless universal joint Patent  
[NASA-CASE-NPO-10646] c 15 N71-28467

Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937

Universal restrainer and joint Patent  
[NASA-CASE-XNP-02278] c 15 N71-28951

Diffusion welding in air --- solid state welding of butt joint by fusion welding, surface cleaning, and heating  
[NASA-CASE-LEW-11387-1] c 37 N74-18128

Bonded joint and method --- for reducing peak shear stress in adhesive bonds  
[NASA-CASE-LAR-10900-1] c 37 N74-23064

Flexible joint for pressurizable garment  
[NASA-CASE-MSG-11072] c 54 N74-32546

Method of making an explosively welded scarf joint  
[NASA-CASE-LAR-11211-1] c 37 N75-12326

Latching device  
[NASA-CASE-MFS-21606-1] c 37 N75-19685

Method of determining bond quality of power transistors attached to substrates --- X ray inspection of junction microstructure  
[NASA-CASE-MFS-21931-1] c 37 N75-26372

Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MFS-19194-1] c 37 N76-14460

Wrist joint assembly  
[NASA-CASE-MFS-23311-1] c 54 N78-17676

Spacesuit mobility joints  
[NASA-CASE-ARC-11058-1] c 54 N78-31735

Thermal barrier pressure seal --- shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSG-18134-1] c 37 N81-15363

Electrical rotary joint apparatus for large space structures  
[NASA-CASE-MFS-23981-1] c 33 N81-19394

Reusable captive blind fastener  
[NASA-CASE-MSG-18742-1] c 37 N82-26673

Interlocking wedge joint  
[NASA-CASE-LAR-12729-1] c 37 N82-26676

Pressure suit joint analyzer  
[NASA-CASE-ARC-11314-1] c 54 N82-26987

Self-locking mechanical center joint --- for space construction  
[NASA-CASE-LAR-12864-1] c 37 N82-29606

Mechanical end joint system for structural column elements  
[NASA-CASE-LAR-12482-1] c 37 N82-32732

**JOSEPHSON JUNCTIONS**  
Doped Josephson tunneling junction for use in a sensitive IR detector  
[NASA-CASE-NPO-13348-1] c 33 N75-31332

Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348

**JOULE-THOMSON EFFECT**  
Refrigeration apparatus  
[NASA-CASE-NPO-10309] c 15 N69-23190

A cycling Joule Thomson refrigerator  
[NASA-CASE-NPO-15251-1] c 31 N81-19344

**JOURNAL BEARINGS**  
Slit regulated gas journal bearing Patent  
[NASA-CASE-XNP-00476] c 15 N70-38620

Air bearing assembly for curved surfaces  
[NASA-CASE-MFS-20423] c 15 N72-11388

Journal bearings --- for lubricant films  
[NASA-CASE-LEW-11076-1] c 37 N74-21061

Journal Bearings  
[NASA-CASE-LEW-11076-2] c 37 N74-32921

Lubricated journal bearing  
[NASA-CASE-LEW-11076-3] c 37 N75-30562

Fluid journal bearings  
[NASA-CASE-LEW-11076-4] c 37 N76-15461

**JUNCTION DIODES**  
Phototransistor  
[NASA-CASE-MFS-20407] c 09 N73-19235

Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-2] c 33 N75-25041

Charge storage diode modulators and demodulators  
[NASA-CASE-NPO-10189-1] c 33 N77-21314

**JUNCTION TRANSISTORS**  
Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c 09 N69-24318

Semiconductor transducer device  
[NASA-CASE-ERC-10087-2] c 14 N72-31446

Method of determining bond quality of power transistors attached to substrates --- X ray inspection of junction microstructure  
[NASA-CASE-MFS-21931-1] c 37 N75-26372

## K

## KEYING

High-speed multiplexing of keyboard data inputs  
[NASA-CASE-NPO-14554-1] c 60 N81-27814

## KIDNEY DISEASES

Aldehyde-containing urea-absorbing polysaccharides  
[NASA-CASE-NPO-13620-1] c 27 N77-30236

Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N82-26961

## KIDNEYS

Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N82-26961

## KINETIC ENERGY

Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c 15 N70-34861

Method and turbine for extracting kinetic energy from a stream of two-phase fluid  
[NASA-CASE-NPO-14130-1] c 34 N79-20335

## KINETIC FRICTION

Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c 14 N71-22995

## KINETICS

Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477

## KRAFT PROCESS (WOODPULP)

Process for purification of waste water produced by a Kraft process pulp and paper mill  
[NASA-CASE-NPO-13847-2] c 85 N79-17747

## L

## LABORATORY EQUIPMENT

Stirring apparatus for plural test tubes Patent  
[NASA-CASE-XAC-06956] c 15 N71-21177

Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080

Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372

Variable angle tube holder  
[NASA-CASE-LAR-10507-1] c 11 N72-25284

Method for controlling vapor content of a gas  
[NASA-CASE-NPO-10633] c 03 N72-28025

Zero gravity liquid mixer  
[NASA-CASE-LAR-10195-1] c 15 N73-19458

Automatic real-time pair-feeding system for animals  
[NASA-CASE-ARC-10302-1] c 51 N74-15778

Automated single-slide staining device  
[NASA-CASE-LAR-11649-1] c 51 N77-27877

Machine for use in monitoring fatigue life for a plurality of elastomeric specimens  
[NASA-CASE-NPO-13731-1] c 39 N78-10493

The 2 deg/90 deg laboratory scattering photometer --- particulate refractivity in hydrosols  
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Automatic multiple-sample applicator and electrophoresis apparatus  
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- Detection of the transitional layer between laminar and turbulent flow areas on a wing surface --- using an accelerometer to measure pressure levels during wind tunnel tests  
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- LAMINATES**  
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- LANDING GEAR**  
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Nose gear steering system for vehicle with main skids Patent  
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Landing pad assembly for aerospace vehicles Patent  
[NASA-CASE-XMF-02853] c 31 N70-36654  
Aircraft wheel spray drag alleviator Patent  
[NASA-CASE-XLA-01583] c 02 N70-36825  
Space craft soft landing system Patent  
[NASA-CASE-XMF-02108] c 31 N70-36845  
Double-acting shock absorber Patent  
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- LANDING MODULES**  
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- LANDING SIMULATION**  
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- LANTHANUM COMPOUNDS**  
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- LARGE SCALE INTEGRATION**  
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- Tactile sensing system --- manipulator controllers  
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General logic structure for custom LSI circuits  
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- LARGE SPACE STRUCTURES**  
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- LARGE SPACE TELESCOPE**  
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- LASER ALTIMETERS**  
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- LASER APPLICATIONS**  
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Wind measurement system  
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Pseudo-backscatter laser Doppler velocimeter employing antiparallel-reflector in the forward direction  
[NASA-CASE-ARC-10970-1] c 36 N77-25501  
Compact pulsed laser having improved heat conductance  
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Laser extensometer  
[NASA-CASE-MFS-19259-1] c 36 N78-14380  
Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148  
Volumetric direct nuclear pumped laser  
[NASA-CASE-LAR-12183-1] c 36 N79-18307  
Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N81-19440  
Method and apparatus for coating substrates using lasers  
[NASA-CASE-LEW-13526-1] c 26 N82-22347  
Arrangement for damping the resonance in a laser diode  
[NASA-CASE-NPO-15980-1] c 36 N82-28618  
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- LASER CAVITIES**  
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- LASER DOPPLER VELOCIMETERS**  
Dual wavelength scanning Doppler velocimeter --- without perturbation of flow fields  
[NASA-CASE-ARC-10637-1] c 35 N75-16783  
Combined dual scatter, local oscillator laser Doppler velocimeter  
[NASA-CASE-ARC-10642-1] c 36 N76-14447  
Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493  
Pseudo-backscatter laser Doppler velocimeter employing antiparallel-reflector in the forward direction  
[NASA-CASE-ARC-10970-1] c 36 N77-25501  
Optical scanner --- laser doppler velocimeters  
[NASA-CASE-LAR-11711-1] c 74 N78-17866  
Versatile LDV burst simulator  
[NASA-CASE-LAR-11859-1] c 35 N79-14349  
Laser Doppler velocity simulator --- to induce frequency shift  
[NASA-CASE-LAR-12176-1] c 36 N80-16321  
Rhomboid prism pair for rotating the plane of parallel light beams --- laser velocimeters  
[NASA-CASE-ARC-11311-1] c 74 N81-16882  
Direction sensitive laser velocimeter --- determining the direction of particles using a helium-neon laser  
[NASA-CASE-LAR-12177-1] c 36 N81-24422  
Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 34 N82-24448  
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- LASER DRILLING**  
In-situ laser retorting of oil shale  
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- LASER FUSION**  
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- LASER GUIDANCE**  
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- LASER GYROSCOPES**  
Optical gyroscope system  
[NASA-CASE-NPO-14258-1] c 35 N81-33448
- LASER HEATING**  
Electric power generation system directory from laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524  
Method and apparatus for shaping and enhancing acoustical levitation forces  
[NASA-CASE-MFS-25050-1] c 71 N81-15767
- LASER INTERFEROMETRY**  
Dual-beam skin friction interferometer --- portable equipment  
[NASA-CASE-ARC-11354-1] c 36 N81-29415
- LASER MATERIALS**  
Laser head for simultaneous optical pumping of several dye lasers --- with single flash lamp  
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- LASER MODE LOCKING**  
Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653  
Dually mode locked Nd YAG laser  
[NASA-CASE-GSC-11746-1] c 36 N75-19654  
Length controlled stabilized mode-lock Nd YAG laser  
[NASA-CASE-GSC-11571-1] c 36 N77-25499
- LASER MODES**  
Optical pump and driver system for lasers  
[NASA-CASE-ERC-10283] c 16 N72-25485  
Acoustically controlled distributed feedback laser  
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- LASER OUTPUTS**  
Method and apparatus for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c 16 N69-31343  
Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-MFS-20386] c 21 N71-19212  
Amplitude modulated laser transmitter Patent  
[NASA-CASE-XMS-04269] c 16 N71-22895  
Laser fluid velocity detector Patent  
[NASA-CASE-XAC-10770-1] c 16 N71-24828  
Laser calibrator Patent  
[NASA-CASE-XLA-03410] c 16 N71-25914  
Method and apparatus for optical modulating a light signal Patent  
[NASA-CASE-GSC-10216-1] c 23 N71-26722  
Laser machining apparatus Patent  
[NASA-CASE-HQN-10541-2] c 15 N71-27135  
Optical frequency waveguide and transmission system Patent  
[NASA-CASE-HQN-10541-4] c 16 N71-27183  
Laser communication system for controlling several functions at a location remote to the laser  
[NASA-CASE-LAR-10311-1] c 16 N73-16536  
Power supply for carbon dioxide lasers  
[NASA-CASE-GSC-11222-1] c 16 N73-32391  
Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c 36 N74-13205  
Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c 36 N74-20009  
Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425  
Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028  
Dually mode locked Nd YAG laser  
[NASA-CASE-GSC-11746-1] c 36 N75-19654  
Laser head for simultaneous optical pumping of several dye lasers --- with single flash lamp  
[NASA-CASE-LAR-11341-1] c 36 N75-19655  
Acoustically controlled distributed feedback laser  
[NASA-CASE-NPO-13175-1] c 36 N75-31427  
Optical noise suppression device and method --- laser light exposing film  
[NASA-CASE-MSC-12640-1] c 74 N76-31998  
Length controlled stabilized mode-lock Nd-YAG laser  
[NASA-CASE-GSC-11571-1] c 36 N77-25499  
Apparatus for photon excited catalysis  
[NASA-CASE-NPO-13566-1] c 25 N77-32255  
Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510  
Collimated beam manifold and method for using the same --- laser beams  
[NASA-CASE-MFS-25312-1] c 74 N80-34251  
Method of and apparatus for double-exposure holographic interferometry  
[NASA-CASE-MFS-25405-1] c 35 N81-27459  
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- High power metallic halide laser — amplifying a copper chloride laser  
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- LASER PLASMAS**  
Continuous plasma laser — method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma  
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- LASER PUMPING**  
Laser apparatus  
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Large volume multiple-path nuclear pumped laser  
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- LASER RANGE FINDERS**  
Laser measuring system for frame assemblies — measuring wire-wrapped frame assemblies in spark chambers  
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- LASER RANGER/TRACKER**  
Method and apparatus for aligning a laser beam projector  
[NASA-CASE-NPO-11087] c 23 N71-29125
- LASER SPECTROSCOPY**  
Stark effect spectroscopy for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159
- LASER WINDOWS**  
Optical scanner — laser doppler velocimeters  
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- LASERS**  
Laser apparatus for removing material from rotating objects Patent  
[NASA-CASE-MFS-11279] c 16 N71-20400  
Laser grating interferometer Patent  
[NASA-CASE-XLA-04295] c 16 N71-24170  
Optical frequency waveguide Patent  
[NASA-CASE-HQN-10541-1] c 07 N71-26291  
Laser camera and diffusion filter therefore Patent  
[NASA-CASE-NPO-10417] c 16 N71-33410  
Optical probing of supersonic flows with statistical correlation  
[NASA-CASE-MFS-20642] c 14 N72-21407  
A technique for breaking ice in the path of a ship  
[NASA-CASE-LAR-10815-1] c 16 N72-22520  
Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397  
Tunable cavity resonator with ramp shaped supports  
[NASA-CASE-HQN-10790-1] c 36 N74-11313  
Short range laser obstacle detector — for surface vehicles using laser diode array  
[NASA-CASE-NPO-11856-1] c 36 N74-15145  
Long range laser traversing system  
[NASA-CASE-GSC-11262-1] c 36 N74-21091  
Deep trap, laser activated image converting system  
[NASA-CASE-NPO-13131-1] c 36 N75-19652  
Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653  
Acoustically controlled distributed feedback laser  
[NASA-CASE-NPO-13175-1] c 36 N75-13427  
Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c 36 N76-29575  
Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c 74 N76-30053  
Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942  
Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346  
Method and apparatus for splitting a beam of energy — optical communication  
[NASA-CASE-GSC-12083-1] c 73 N78-32848  
Shock isolator for operating a diode laser on a closed-cycle refrigerator  
[NASA-CASE-GSC-12297-1] c 37 N79-28549  
Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N81-12407
- LATCHES**  
Despin weight release Patent  
[NASA-CASE-XLA-00679] c 15 N70-38601  
Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190  
Quick disconnect latch and handle combination Patent  
[NASA-CASE-MFS-11132] c 15 N71-17649  
Latching mechanism Patent  
[NASA-CASE-XMS-03745] c 15 N71-21076  
Latch/ejector unit Patent  
[NASA-CASE-XLA-03538] c 15 N71-24897  
Latching mechanism Patent  
[NASA-CASE-MSC-15474-1] c 15 N71-26162  
Latch mechanism  
[NASA-CASE-MSC-12549-1] c 37 N74-27903
- Latching device  
[NASA-CASE-MFS-21606-1] c 37 N75-19685  
Load regulating latch  
[NASA-CASE-MSC-19535-1] c 37 N77-32499  
Helmet latching and attaching ring  
[NASA-CASE-XMS-04670] c 54 N78-17678  
Low temperature latching solenoid  
[NASA-CASE-MSC-18106-1] c 33 N82-11357  
Hemispherical latching apparatus for payload retention  
[NASA-CASE-MFS-25837] c 16 N82-31398  
Slide release mechanism — for the external tank  
[NASA-CASE-MSC-20080-1] c 37 N82-31688  
Connection system  
[NASA-CASE-MSC-20319-1] c 37 N82-31689  
CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690  
Mechanical end joint system for structural column elements  
[NASA-CASE-LAR-12482-1] c 37 N82-32732
- LATERAL CONTROL**  
Three-axis controller Patent  
[NASA-CASE-XAC-01404] c 05 N70-41581  
Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c 21 N70-41856  
High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088  
Vortex-lift roll-control device  
[NASA-CASE-LAR-11868-2] c 08 N79-14108  
Propulsive lateral control nozzle  
[NASA-CASE-LAR-12136-1] c 08 N81-33210  
Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-1] c 05 N82-25240
- LATERAL STABILITY**  
Annular wing  
[NASA-CASE-FRC-11007-2] c 05 N82-26277
- LATEX**  
Molten salt pyrolysis of latex — synthetic hydrocarbon fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261  
Process for preparation of large-particle-size monodisperse latexes  
[NASA-CASE-MFS-25000-1] c 25 N81-19242
- LATHES**  
Apparatus for machining geometric cones Patent  
[NASA-CASE-XMS-04292] c 15 N71-22722  
Lathe tool bit and holder for machining fiberglass materials  
[NASA-CASE-XLA-10470] c 15 N72-21489
- LAUNCH ESCAPE SYSTEMS**  
Emergency escape system Patent  
[NASA-CASE-XKS-02342] c 05 N71-11199  
Device for separating occupant from an ejection seat  
[NASA-CASE-XMS-04625] c 05 N71-20718
- LAUNCH VEHICLE CONFIGURATIONS**  
Rotating launch device for a remotely piloted aircraft  
[NASA-CASE-ARC-10979-1] c 09 N77-19076
- LAUNCH VEHICLES**  
A support technique for vertically oriented launch vehicles  
[NASA-CASE-XLA-02704] c 11 N69-21540  
Method and apparatus for detection and location of microleaks Patent  
[NASA-CASE-XMF-02307] c 14 N71-10779
- LAUNCHING PADS**  
Missile launch release system Patent  
[NASA-CASE-XMF-03198] c 30 N70-40353  
Remote controlled tubular disconnect Patent  
[NASA-CASE-XLA-01396] c 03 N71-12259  
Validation device for spacecraft checkout equipment  
[NASA-CASE-XKS-10543] c 07 N71-26292
- LAY-UP**  
Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235
- LAYERS**  
Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-1] c 28 N78-24365
- LEACHING**  
Process for the leaching of AP from propellant  
[NASA-CASE-NPO-14109-1] c 28 N80-23471
- LEAD (METAL)**  
Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27684  
Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524
- LEAD TELLURIDES**  
Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786
- Segmenting lead telluride-silicon germanium thermoelements Patent  
[NASA-CASE-XGS-05718] c 26 N71-16037
- LEADING EDGE FLAPS**  
Leading edge vortex flaps for drag reduction — during subsonic flight  
[NASA-CASE-LAR-12750-1] c 02 N81-19016  
Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-1] c 05 N82-25240
- LEADING EDGES**  
Reentry vehicle leading edge Patent  
[NASA-CASE-XLA-00165] c 31 N70-33242  
Leading edge curvature based on convective heating Patent  
[NASA-CASE-XLA-01486] c 01 N71-23497  
Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170
- LEAKAGE**  
Rocket chamber leak test fixture  
[NASA-CASE-XFR-09479] c 14 N69-27503  
Method and apparatus for detection and location of microleaks Patent  
[NASA-CASE-XMF-02307] c 14 N71-10779  
Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573  
Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161  
Method for leakage testing of tanks Patent  
[NASA-CASE-XMF-02392] c 32 N71-24285  
Leak detector wherein a probe is monitored with ultraviolet radiation Patent  
[NASA-CASE-ERC-10034] c 15 N71-24896  
Method for detecting leaks in hermetically sealed containers Patent  
[NASA-CASE-ERC-10045] c 15 N71-24910  
Method and apparatus for detecting gross leaks Patent  
[NASA-CASE-ERC-10033] c 14 N71-26672  
Onifice gross leak tester Patent  
[NASA-CASE-ERC-10150] c 14 N71-28992  
Leak detector  
[NASA-CASE-MFS-21761-1] c 35 N75-15931  
Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612  
Low heat leak connector for cryogenic system  
[NASA-CASE-XLE-02367-1] c 31 N78-21225
- LEG (ANATOMY)**  
Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735  
Rotational joint assembly for the prosthetic leg  
[NASA-CASE-KSC-11004-1] c 54 N77-30749  
Mechanical energy storage device for hip disarticulation  
[NASA-CASE-ARC-10916-1] c 52 N78-10866
- LENS DESIGN**  
Chromatically corrected virtual image display — lens design for flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N78-14892
- LENSES**  
High temperature lens construction Patent  
[NASA-CASE-XNP-04111] c 14 N71-15622  
Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474  
Petzval type objective including field shaping lens Patent  
[NASA-CASE-GSC-10700] c 23 N71-30027  
Method and apparatus for eliminating coherent noise in a coherent energy imaging system without destroying spatial coherence  
[NASA-CASE-GSC-11133-1] c 23 N72-11568  
Plural beam antenna  
[NASA-CASE-GSC-11013-1] c 09 N73-19234  
Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c 36 N77-32478  
Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854  
Chromatically corrected virtual image visual display — reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185  
Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 35 N81-12386  
Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072  
Scanning afocal laser velocimeter projection lens system  
[NASA-CASE-LAR-12328-1] c 36 N82-32712
- LENTICULAR BODIES**  
Space and atmospheric reentry vehicle Patent  
[NASA-CASE-XGS-00260] c 31 N70-37924
- LEVEL (HORIZONTAL)**  
Hot wire liquid level detector for cryogenic fluids Patent  
[NASA-CASE-XLE-00454] c 23 N71-17802



Rotary leveling base platform  
[NASA-CASE-ARC-10981-1] c 37 N78-27425

**LEVEL (QUANTITY)**

Spherical tank gauge Patent  
[NASA-CASE-XMS-06236] c 14 N71-21007

Positive dc to positive dc converter Patent  
[NASA-CASE-XMF-14301] c 09 N71-23188

**LEVELING**

Adjustable attitude guide device Patent  
[NASA-CASE-XLA-07911] c 15 N71-15571

Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610

Adjustable support  
[NASA-CASE-NPO-10721] c 15 N72-27484

Automatically operable self-leveling load table  
[NASA-CASE-MFS-22039-1] c 09 N75-12968

**LEVITATION**

Containerless melting and rapid solidification apparatus and method  
[NASA-CASE-MFS-25305-1] c 35 N81-16427

Gas levitator and method for containerless processing  
[NASA-CASE-MFS-25509-1] c 34 N82-10359

Sphere forming method and apparatus  
[NASA-CASE-NPO-15070-1] c 31 N82-33567

**LIFE (DURABILITY)**

Hollow rolling element bearings  
[NASA-CASE-LEW-11087-3] c 37 N74-21064

A method of increasing minority carrier lifetime in silicon web or the like — VLSI semiconductor devices and high performance solar cells  
[NASA-CASE-NPO-15530-1] c 76 N82-24993

**LIFE DETECTORS**

Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487

Lyophilized reaction mixtures Patent  
[NASA-CASE-XGS-05532] c 06 N71-17705

**LIFE RAFTS**

Life raft Patent  
[NASA-CASE-XMS-00863] c 05 N70-34857

Life raft stabilizer  
[NASA-CASE-MS-12393-1] c 02 N73-26006

Modification of one man life raft  
[NASA-CASE-LAR-10241-1] c 54 N74-14845

**LIFE SUPPORT SYSTEMS**

Shock absorbing support and restraint means Patent  
[NASA-CASE-XMS-01240] c 05 N70-35152

Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203

Extravehicular tunnel suit system Patent  
[NASA-CASE-MS-12243-1] c 05 N71-24728

Foreshortened convolute section for a pressurized suit Patent  
[NASA-CASE-XMS-09637-1] c 05 N71-24730

Orbital escape device Patent  
[NASA-CASE-XMS-06162] c 31 N71-28851

Specialized halogen generator for purification of water Patent  
[NASA-CASE-XLA-08913] c 14 N71-28933

Life support system  
[NASA-CASE-MS-12411-1] c 05 N72-20096

Air removal device  
[NASA-CASE-XLA-8914] c 15 N73-12492

Space suit  
[NASA-CASE-MS-12609-1] c 05 N73-32012

Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813

Helmet feedport  
[NASA-CASE-XMS-09653] c 54 N78-17680

Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721

Air removal device — life support systems  
[NASA-CASE-XLA-8914-2] c 25 N82-21269

**LIFT**

Slotted variable camber flap  
[NASA-CASE-LAR-12541-1] c 05 N82-18203

Hinged strike aircraft control system  
[NASA-CASE-LAR-12860-1] c 05 N82-26278

**LIFT DEVICES**

Device for handling heavy loads  
[NASA-CASE-XNP-04969] c 11 N69-27466

Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176

Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110

Ferry system  
[NASA-CASE-LAR-10574-1] c 11 N73-13257

High lift aircraft — with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c 05 N75-25914

Device for installing rocket engines  
[NASA-CASE-MFS-18220-1] c 20 N76-22296

Vortex-lift roll-control device  
[NASA-CASE-LAR-11868-2] c 08 N79-14108

**LIFT DRAG RATIO**

Ring wing tension vehicle Patent  
[NASA-CASE-XLA-04901] c 31 N71-24315

Annular wing  
[NASA-CASE-FRC-11007-2] c 05 N82-26277

**LIFTING BODIES**

Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176

Lifting body Patent Application  
[NASA-CASE-FRC-10063] c 01 N71-12217

Lift balancing device  
[NASA-CASE-LAR-10348-1] c 11 N73-12264

**LIFTING REENTRY VEHICLES**

Space and atmospheric reentry vehicle Patent  
[NASA-CASE-XGS-00260] c 31 N70-37924

Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691] c 31 N71-15674

Flight craft Patent  
[NASA-CASE-XAC-02058] c 02 N71-16087

**LIGHT (VISIBLE RADIATION)**

Anti-glare improvement for optical imaging systems Patent  
[NASA-CASE-NPO-10337] c 14 N71-15604

Maksutov spectrograph Patent  
[NASA-CASE-XLA-10402] c 14 N71-29041

Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484

**LIGHT AIRCRAFT**

Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110

**LIGHT BEAMS**

Spectroscope equipment using a slender cylindrical reflector as a substitute for a slit Patent  
[NASA-CASE-XGS-08269] c 23 N71-26206

Optical communications system Patent  
[NASA-CASE-XLA-01090] c 16 N71-28963

Multiple hologram recording and readout system Patent  
[NASA-CASE-ERC-10151] c 16 N71-29131

Rhomboid prism pair for rotating the plane of parallel light beams — laser velocimeters  
[NASA-CASE-ARC-11311-1] c 74 N81-16882

**LIGHT EMITTING DIODES**

Photoelectric detection system — manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545

Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N82-29319

**LIGHT GAS GUNS**

Hypervelocity gun Patent  
[NASA-CASE-XAC-05902] c 11 N71-18578

**LIGHT MODULATION**

Retrodirective modulator Patent  
[NASA-CASE-GSC-10062] c 14 N71-15605

Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479

Method and apparatus for optical modulating a light signal Patent  
[NASA-CASE-GSC-10216-1] c 23 N71-26722

Optical communications system Patent  
[NASA-CASE-XLA-01090] c 16 N71-28963

Lamp modulator  
[NASA-CASE-KSC-10565] c 09 N72-25250

Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c 74 N76-30053

Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510

Collimated beam manifold and method for using the same — laser beams  
[NASA-CASE-MFS-25312-1] c 74 N80-34251

Fluorescent radiation converter  
[NASA-CASE-GSC-12528-1] c 74 N81-24900

**LIGHT SCATTERING**

The 2 deg/90 deg laboratory scattering photometer — particulate refractivity in hydrosols  
[NASA-CASE-GSC-12088-1] c 74 N78-13874

**LIGHT SCATTERING METERS**

System for the measurement of ultra-low stray light levels — determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865

**LIGHT SOURCES**

Light radiation direction indicator with a baffle of two parallel grids  
[NASA-CASE-XNP-03930] c 14 N69-24331

High intensity heat and light unit Patent  
[NASA-CASE-XLA-00141] c 09 N70-33312

Photosensitive device to detect bearing deviation Patent  
[NASA-CASE-XNP-00438] c 21 N70-35089

Light position locating system Patent  
[NASA-CASE-XNP-01059] c 23 N71-21821

Optical systems having spatially irrelevant outputs  
[NASA-CASE-ERC-10248] c 14 N72-17323

Ultrastable calibrated light source  
[NASA-CASE-MS-12293-1] c 14 N72-27411

Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10467-1] c 09 N73-14214

Interferometric rotation sensor  
[NASA-CASE-ARC-10278-1] c 14 N73-25463

Altitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089

Very high intensity light source using a cathode ray tube — electron beams  
[NASA-CASE-XNP-01296] c 33 N75-27250

Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c 33 N75-29318

Uniform variable light source  
[NASA-CASE-NPO-11429-1] c 74 N77-21941

**LIGHT TRANSMISSION**

Hybrid holographic system using reflected and transmitted object beams simultaneously Patent  
[NASA-CASE-MFS-20074] c 16 N71-15565

Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c 23 N71-16365

Optical monitor panel Patent  
[NASA-CASE-XKS-03509] c 14 N71-23175

Solar cell panels with light transmitting plate  
[NASA-CASE-NPO-10747] c 03 N72-22042

Optical frequency waveguide and transmission system  
[NASA-CASE-HQN-10541-3] c 23 N72-23695

Light regulator  
[NASA-CASE-LAR-10836-1] c 26 N72-27784

Transmitting and reflecting diffuser — for ultraviolet light  
[NASA-CASE-LAR-10385-2] c 70 N74-13436

Optical instrument employing reticle having preselected visual response pattern formed thereon  
[NASA-CASE-ARC-10976-1] c 74 N77-22950

Transmitting and reflecting diffuser — using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879

Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072

**LIGHTING EQUIPMENT**

Internal work light Patent  
[NASA-CASE-XKS-05932] c 09 N71-26787

Pressurized lighting system  
[NASA-CASE-KSC-10644] c 09 N72-27227

Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315

**LIGHTNING**

Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175

Lightning tracking system  
[NASA-CASE-KSC-10729-1] c 09 N73-32110

Automatic lightning detection and photographic system  
[NASA-CASE-KSC-10728-1] c 14 N73-32319

Lightning current measuring systems  
[NASA-CASE-KSC-10807-1] c 33 N75-26246

Lightning current waveform measuring system  
[NASA-CASE-KSC-11018-1] c 33 N79-10337

Lightning current detector  
[NASA-CASE-KSC-11057-1] c 33 N79-14305

Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779

**LIMBS (ANATOMY)**

Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772

Apparatus for determining changes in limb volume  
[NASA-CASE-MS-18759-1] c 52 N81-24716

**LIMITER CIRCUITS**

Variable duration pulse integrator Patent  
[NASA-CASE-XLA-01219] c 10 N71-23084

Noise limiter Patent  
[NASA-CASE-NPO-10169] c 10 N71-24844

Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895

Low level signal limiter  
[NASA-CASE-XLE-04791] c 32 N74-22096

Inrush current limiter  
[NASA-CASE-GSC-11789-1] c 33 N77-14333

**LINE SPECTRA**

Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015

**LINEAR ACCELERATORS**

Linear accelerator frequency control system Patent  
[NASA-CASE-XGS-05441] c 10 N71-22962

**LINEAR ARRAYS**

Multispectral imaging and analysis system — using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288



## LINEAR RECEIVERS

Antenna array at focal plane of reflector with coupling network for beam switching Patent  
[NASA-CASE-GSC-10220-1] c 07 N71-27233

## LINEAR SYSTEMS

Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503  
A m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c 10 N73-20254

## LINEARITY

Semi-linear ball bearing Patent  
[NASA-CASE-XLA-02809] c 15 N71-22982  
Mechanical actuator Patent  
[NASA-CASE-XGS-04548] c 15 N71-24045  
Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 33 N81-22279

## LININGS

Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453

## LINKAGES

Collapsible nozzle extension for rocket engines Patent  
[NASA-CASE-MFS-11497] c 28 N71-16224  
Adjustable force probe  
[NASA-CASE-MFS-20760] c 14 N72-33377  
Locking redundant link  
[NASA-CASE-LAR-11900-1] c 37 N79-14382  
Compensating linkage for main rotor control  
[NASA-CASE-LAR-11797-1] c 05 N81-19087

## LIQUEFACTION

Ophthalmic liquefaction pump  
[NASA-CASE-LEW-12051-1] c 52 N75-33640

## LIQUID ATOMIZATION

Improved constant-output atomizer  
[NASA-CASE-MFS-25631-1] c 34 N82-10360

## LIQUID BEARINGS

High speed hybrid bearing comprising a fluid bearing and a rolling bearing connected in series  
[NASA-CASE-LEW-11152-1] c 15 N73-32359

## LIQUID COOLING

Water cooled contactor for anode in carbon arc mechanism  
[NASA-CASE-XMS-03700] c 15 N69-24266  
External liquid-spray cooling of turbine blades Patent  
[NASA-CASE-XLE-00037] c 28 N70-33372  
Solenoid construction Patent  
[NASA-CASE-XNP-01951] c 09 N70-41929  
Laminar flow enhancement Patent  
[NASA-CASE-NPO-10122] c 12 N71-17631  
Space suit heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439  
Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114-2] c 09 N71-24807  
Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114] c 33 N71-27862  
Liquid spray cooling method Patent  
[NASA-CASE-XLE-00027] c 33 N71-29152  
Automatic control of liquid cooling garment by cutaneous and external auditory meatus temperatures  
[NASA-CASE-MSC-13917-1] c 05 N72-15098  
Temperature controller for a fluid cooled garment  
[NASA-CASE-ARC-10599-1] c 05 N73-26071  
Heat exchanger system and method  
[NASA-CASE-LAR-10799-2] c 34 N76-17317  
Liquid cooled brasserie and method of diagnosing malignant tumors therewith  
[NASA-CASE-ARC-11007-1] c 52 N77-14736  
Closed loop spray cooling apparatus --- for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c 31 N78-17237

## LIQUID CRYSTALS

Angular velocity and acceleration measuring apparatus  
[NASA-CASE-ERC-10292] c 14 N72-25410  
Electricity measurement devices employing liquid crystalline materials  
[NASA-CASE-ERC-10275] c 26 N72-25680

## LIQUID FILLED SHELLS

Liquid rocket system Patent  
[NASA-CASE-XNP-00610] c 28 N70-36910  
Fluid sample collector Patent  
[NASA-CASE-XMS-06767-1] c 14 N71-20435  
Fluid containers and resealable septum therefor Patent  
[NASA-CASE-NPO-10123] c 15 N71-24835  
Omnidirectional acceleration device Patent  
[NASA-CASE-HQN-10780] c 14 N71-30265

## LIQUID FLOW

Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988  
Liquid junction and method of fabricating the same Patent Application  
[NASA-CASE-NPO-10682] c 15 N70-34653

Valve actuator Patent  
[NASA-CASE-XHQ-01208] c 15 N70-35409  
Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492  
Positive displacement flowmeter Patent  
[NASA-CASE-XMF-02822] c 14 N70-41994  
Liquid flow sight assembly Patent  
[NASA-CASE-XLE-02998] c 14 N70-42074  
Ablative system  
[NASA-CASE-LEW-10359-2] c 33 N73-25952  
Zero gravity liquid transfer screen  
[NASA-CASE-KSC-10626] c 14 N73-27378  
System for measuring Reynolds in a turbulently flowing fluid --- signal processing  
[NASA-CASE-ARC-10755-2] c 34 N76-27517  
Directional flow sensor  
[NASA-CASE-FRC-11074-1] c 35 N82-11436  
Deaerator/mixer for liquids  
[NASA-CASE-MSC-18936-1] c 25 N82-22329

## LIQUID HELIUM

Heat operated cryogenic electrical generator  
[NASA-CASE-NPO-13303-1] c 20 N75-24837  
Helium refrigerator  
[NASA-CASE-NPO-13435-1] c 31 N76-14284  
Cryostat system for temperatures on the order of 2 deg K or less  
[NASA-CASE-NPO-13459-1] c 31 N77-10229  
Multistation refrigeration system  
[NASA-CASE-NPO-13839-1] c 31 N78-25256  
Stabilization of He2(a 3 Sigma u+ molecules in liquid helium by optical pumping for vacuum UV laser 6  
[NASA-CASE-NPO-13993-1] c 72 N79-13826  
Low cost cryostat  
[NASA-CASE-NPO-14513-1] c 35 N81-14287

## LIQUID HYDROGEN

Cryogenic thermal insulation Patent  
[NASA-CASE-XMF-05046] c 33 N71-28892  
Reinforced polyquinoxaline gasket and method of preparing the same --- resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364-1] c 37 N74-18126

## LIQUID INJECTION

Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c 28 N70-34294  
Control system for rocket vehicles Patent  
[NASA-CASE-XLA-01163] c 21 N71-15582  
Injector assembly for liquid fueled rocket engines Patent  
[NASA-CASE-XMF-00968] c 28 N71-15660  
Sodium storage and injection system  
[NASA-CASE-NPO-14384-1] c 37 N80-10494  
Method of producing silicon --- gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231

## LIQUID LASERS

Method and apparatus for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c 16 N69-31343

## LIQUID LEVELS

Inductive liquid level detection system Patent  
[NASA-CASE-XLE-01609] c 14 N71-10500  
Apparatus for fiber optic liquid level sensing  
[NASA-CASE-MSC-18674-1] c 74 N81-24907

## LIQUID METALS

Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983  
Two-fluid magnetohydrodynamic system and method for thermal-electric power conversion Patent  
[NASA-CASE-XNP-00644] c 03 N70-36803  
Analytical test apparatus and method for determining oxide content of alkali metal Patent  
[NASA-CASE-XLE-01997] c 06 N71-23527  
Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114] c 33 N71-27862  
Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747  
Shell side liquid metal boiler  
[NASA-CASE-NPO-10831] c 33 N72-20915  
Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129  
Electromagnetic flow rate meter --- for liquid metals  
[NASA-CASE-LEW-10981-1] c 35 N74-21018  
Process for preparing liquid metal electrical contact device  
[NASA-CASE-LEW-11978-1] c 33 N77-26385  
Solar driven liquid metal MHD power generator  
[NASA-CASE-LAR-12495-1] c 44 N81-32609

## LIQUID NITROGEN

Cryogenic feedthrough  
[NASA-CASE-LAR-10031] c 15 N72-22484

## LIQUID OXYGEN

Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170

## LIQUID PHASE EPITAXY

Controlled in-situ etchback  
[NASA-CASE-NPO-15625-1] c 76 N82-25895

## LIQUID PHASES

Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635  
Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975  
Fluid phase analyzer Patent  
[NASA-CASE-NPO-10691] c 14 N71-26199  
Cryogenic liquid sensor  
[NASA-CASE-NPO-10619-1] c 35 N77-21393

## LIQUID PROPELLANT ROCKET ENGINES

Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c 28 N70-33284  
Attitude and propellant flow control system and method Patent  
[NASA-CASE-XMF-00185] c 21 N70-34539  
Injector for bipropellant rocket engines Patent  
[NASA-CASE-XMF-00148] c 28 N70-38710  
Zero gravity starting means for liquid propellant motors Patent  
[NASA-CASE-XNP-01390] c 28 N70-41275  
Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502  
Space vehicle  
[NASA-CASE-MFS-22734-1] c 18 N75-19329  
Fluid thrust control system --- for liquid propellant rocket engines  
[NASA-CASE-XMF-05964-1] c 20 N79-21124  
Rocket injector head  
[NASA-CASE-XMF-04592-1] c 20 N79-21125  
Low thrust monopropellant engine  
[NASA-CASE-GSC-12194-2] c 20 N82-18314

## LIQUID ROCKET PROPELLANTS

Rocket propellant injector Patent  
[NASA-CASE-XLE-00103] c 28 N70-33241  
Liquid rocket system Patent  
[NASA-CASE-XNP-00610] c 28 N70-36910  
Rocket motor system Patent  
[NASA-CASE-XLE-00323] c 28 N70-38505  
High temperature spark plug Patent  
[NASA-CASE-XLE-00660] c 28 N70-39925  
High pressure filter Patent  
[NASA-CASE-XNP-00732] c 28 N70-41447  
Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41646  
Tank construction for space vehicles Patent  
[NASA-CASE-XMF-01899] c 31 N70-41948  
Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635  
Control valve and co-axial variable injector Patent  
[NASA-CASE-XNP-09702] c 15 N71-17654  
Slosh alleviator Patent  
[NASA-CASE-XLA-05749] c 15 N71-19569  
Filler valve Patent  
[NASA-CASE-XNP-01747] c 15 N71-23024  
Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339  
Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747  
Response analyzers for sensors Patent  
[NASA-CASE-MFS-11204] c 14 N71-29134  
Passive propellant system  
[NASA-CASE-MFS-23642-1] c 20 N80-10278  
Supercharged topping rocket propellant feed system  
[NASA-CASE-XLE-02062-1] c 20 N80-14188

## LIQUID SLOSHING

Slosh suppressing device and method Patent  
[NASA-CASE-XMF-00658] c 12 N70-38997  
Flexible ring slosh damping baffle Patent  
[NASA-CASE-LAR-10317-1] c 32 N71-16103  
Buoyant anti-slosh system Patent  
[NASA-CASE-XLA-04605] c 32 N71-16106  
Hot wire liquid level detector for cryogenic fluids Patent  
[NASA-CASE-XLE-00454] c 23 N71-17802  
Slosh alleviator Patent  
[NASA-CASE-XLA-05749] c 15 N71-19569  
Instrument for measuring the dynamic behavior of liquids Patent  
[NASA-CASE-XLA-05541] c 12 N71-26387

## LIQUID SODIUM

Sodium storage and injection system  
[NASA-CASE-NPO-14384-1] c 37 N80-10494

## LIQUID-GAS MIXTURES

Liquid-gas separation system Patent  
[NASA-CASE-XMS-01624] c 15 N70-40062  
Liquid-gas separator for zero gravity environment Patent  
[NASA-CASE-XMS-01492] c 05 N70-41297



- Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41646
- Separator Patent  
[NASA-CASE-XLA-00415] c 15 N71-16079
- Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023
- Air removal device — life support systems  
[NASA-CASE-XLA-8914-2] c 25 N82-21269

## LIQUID-VAPOR INTERFACES

- Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968
- Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294
- Response analyzers for sensors Patent  
[NASA-CASE-MFS-11204] c 14 N71-29134

## LIQUIDS

- Liquid-gas separation system Patent  
[NASA-CASE-XMS-01824] c 15 N70-40062
- Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610
- Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c 15 N71-27184
- Apparatus for detecting the amount of material in a resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397
- Resonant infrasonic gauging apparatus  
[NASA-CASE-MSC-11847-1] c 14 N72-11363
- Ablative system  
[NASA-CASE-LEW-10359] c 33 N72-25911
- Liquid waste feed system  
[NASA-CASE-LAR-10365-1] c 05 N72-27102
- Zero gravity liquid mixer  
[NASA-CASE-LAR-10195-1] c 15 N73-19458
- Bimetallic fluid displacement apparatus — for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c 35 N74-15126
- Method and device for detection of surface discontinuities or defects  
[NASA-CASE-MSC-14187-1] c 35 N74-32879
- Automatic liquid inventory collecting and dispensing unit  
[NASA-CASE-LAR-11071-1] c 35 N75-19611
- Thermal energy storage system — operating on superheating of liquids  
[NASA-CASE-MFS-23167-1] c 44 N76-31667
- Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c 35 N78-12390
- Automatic fluid dispenser  
[NASA-CASE-ARC-10820-1] c 35 N78-19466
- System for monitoring physical characteristics of fluids — acoustic techniques  
[NASA-CASE-NPO-15400-1] c 34 N81-24384
- Liquid-immersible electrostatic ultrasonic transducer  
[NASA-CASE-LAR-12465-1] c 33 N82-26572

## LITHIUM COMPOUNDS

- Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029

## LOAD DISTRIBUTION (FORCES)

- Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c 14 N70-34705
- Multiple Belleville spring assembly Patent  
[NASA-CASE-XNP-00840] c 15 N70-38225
- Device for use in loading tension members — characterized by elongated elastic body  
[NASA-CASE-MFS-21488-1] c 14 N75-24794
- Pneumatic load compensating or controlling system  
[NASA-CASE-ARC-10907-1] c 37 N75-32465

## LOAD TESTING MACHINES

- Load cell protection device Patent  
[NASA-CASE-XMS-06782] c 32 N71-15974
- Load relieving device Patent  
[NASA-CASE-XMS-06329-1] c 15 N71-20441
- Method and apparatus for tensile testing of metal foil  
[NASA-CASE-LAR-10208-1] c 35 N76-18400
- Fatigue failure load indicator  
[NASA-CASE-LAR-12027-1] c 39 N79-22537

## LOAD TESTS

- Differential pressure cell Patent  
[NASA-CASE-XAC-00042] c 14 N70-34816
- Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 36 N82-28619

## LOADING OPERATIONS

- Air bearing Patent  
[NASA-CASE-XMF-01887] c 15 N71-10617

## LOADS (FORCES)

- Device for handling heavy loads  
[NASA-CASE-XNP-04969] c 11 N69-27466
- Two-plane balance Patent  
[NASA-CASE-XAC-00073] c 14 N70-34813
- Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-18052
- Load relieving device Patent  
[NASA-CASE-XMS-06329-1] c 15 N71-20441

- Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191
- Transverse piezoresistance and pinch effect electromechanical transducers Patent  
[NASA-CASE-ERC-10088] c 26 N71-25490
- Turn on transient limiter Patent  
[NASA-CASE-GSC-10413] c 10 N71-26531
- Synchronous dc direct drive system Patent  
[NASA-CASE-GSC-10065-1] c 10 N71-27136
- Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c 15 N71-27432
- Energy absorption device Patent  
[NASA-CASE-XNP-01848] c 15 N71-28959
- Air bearing  
[NASA-CASE-WLP-10002] c 15 N72-17451
- Device for measuring bearing preload  
[NASA-CASE-MFS-20434] c 11 N72-25288
- Variable direction force coupler  
[NASA-CASE-MFS-20317] c 15 N73-13463
- Ergometer  
[NASA-CASE-MFS-21109-1] c 05 N73-27941
- Three-axis adjustable loading structure  
[NASA-CASE-FRC-10051-1] c 35 N74-13129
- G-load measuring and indicator apparatus — for aircraft  
[NASA-CASE-ARC-10806] c 06 N74-27872
- Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c 35 N77-18417
- Penetrometer — for determining load bearing characteristics of inclined surfaces  
[NASA-CASE-NPO-11103-1] c 35 N77-27367
- Load regulating latch  
[NASA-CASE-MSC-19535-1] c 37 N77-32499

## LOCATES SYSTEM

- Lightning tracking system  
[NASA-CASE-KSC-10729-1] c 09 N73-32110
- Position determination systems — using orbital antenna scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c 17 N76-21250

## LOCKING

- Coupling device  
[NASA-CASE-XMS-07846-1] c 09 N69-21927
- Interlocking wedge joint  
[NASA-CASE-LAR-12729-1] c 37 N82-26676

## LOCKS (FASTENERS)

- Locking device with rolling detents Patent  
[NASA-CASE-XMF-01371] c 15 N70-41829
- Bearing and gimbal lock mechanism and spiral flex lead module Patent  
[NASA-CASE-GSC-10556-1] c 31 N71-26537
- Locking device for turbine rotor blades Patent  
[NASA-CASE-XNP-00816] c 28 N71-28928
- Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10686] c 14 N71-28935
- Safety-type locking pin  
[NASA-CASE-MFS-18495] c 15 N72-11385
- Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-1] c 54 N76-22914
- Aircraft canopy lock  
[NASA-CASE-FRC-11065-1] c 05 N81-24047
- Portable appliance security apparatus  
[NASA-CASE-GSC-12399-1] c 33 N81-25299
- Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-2] c 52 N81-25661
- High temperature penetrator assembly with bayonet plug and ramp-actuated lock  
[NASA-CASE-MSC-18526-1] c 37 N82-24494
- Self-locking mechanical center joint — for space construction  
[NASA-CASE-LAR-12864-1] c 37 N82-29606

## LOCOMOTION

- Jet shoes  
[NASA-CASE-XLA-08491] c 05 N69-21380
- Training vehicle for controlling attitude Patent  
[NASA-CASE-XMS-02977] c 11 N71-10746
- Restraint torso for a pressurized suit  
[NASA-CASE-MSC-12397-1] c 05 N72-25119
- Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 54 N81-15699

## LOGARITHMIC RECEIVERS

- Logarithmic circuit with wide dynamic range  
[NASA-CASE-GSC-12145-1] c 33 N78-32339

## LOGARITHMS

- Logarithmic function generator utilizing an exponentially varying signal in an inverse manner  
[NASA-CASE-ERC-10267] c 09 N72-23173

## LOGIC CIRCUITS

- A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148
- Relay binary circuit Patent  
[NASA-CASE-XMF-00421] c 09 N70-34502
- Binary to binary-coded-decimal converter Patent  
[NASA-CASE-XNP-00432] c 08 N70-35423

- Analog-to-digital conversion system Patent  
[NASA-CASE-XAC-00404] c 08 N70-40125
- Data processor having multiple sections activated at different times by selective power coupling to the sections Patent  
[NASA-CASE-XGS-04767] c 08 N71-12494
- Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c 08 N71-12505
- AC logic flip-flop circuits Patent  
[NASA-CASE-XGS-00823] c 10 N71-15910
- Logic AND gate for fluid circuits Patent  
[NASA-CASE-XLA-07391] c 12 N71-17579
- Ripple add and ripple subtract binary counters Patent  
[NASA-CASE-XGS-04766] c 08 N71-18602
- Exclusive-Or digital logic module Patent  
[NASA-CASE-XLA-07732] c 08 N71-18751
- Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c 10 N71-18772
- Serial digital decoder Patent  
[NASA-CASE-NPO-10150] c 08 N71-24650
- BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890
- Current steering switch Patent  
[NASA-CASE-XNP-08567] c 09 N71-26000
- Parallel generation of the check bits of a PN sequence Patent  
[NASA-CASE-XNP-04623] c 10 N71-26103
- Adaptive system and method for signal generation Patent  
[NASA-CASE-GSC-11367] c 10 N71-26374
- Fast response low power drain logic circuits  
[NASA-CASE-GSC-10878-1] c 10 N72-22236
- Logical function generator  
[NASA-CASE-XLA-05099] c 09 N73-13209
- A synchronous binary array divider  
[NASA-CASE-ERC-10180-1] c 60 N74-20836
- Four phase logic systems — including integrated microcircuits  
[NASA-CASE-MSC-14240-1] c 33 N75-14957
- A general logic structure for custom LSI circuits  
[NASA-CASE-NPO-14410-1] c 33 N79-25314
- Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342
- Adaptive control system for line-commutated inverters  
[NASA-CASE-MFS-25209-1] c 33 N81-31480
- Adaptive reference voltage generator for firing angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N81-31481
- Logic-controlled occlusive cuff system  
[NASA-CASE-MSC-14836-1] c 52 N82-11770
- General logic structure for custom LSI circuits  
[NASA-CASE-NPO-14410-2] c 33 N82-25440

## LOGIC DESIGN

- General logic structure for custom LSI circuits  
[NASA-CASE-NPO-14410-2] c 33 N82-25440

## LONGITUDINAL CONTROL

- Three-axis controller Patent  
[NASA-CASE-XAC-01404] c 05 N70-41581
- Pitch attitude stabilization system utilizing engine pressure ratio feedback signals  
[NASA-CASE-LAR-12562-1] c 08 N81-26152

## LONGITUDINAL STABILITY

- Annular wing  
[NASA-CASE-FRC-11007-2] c 05 N82-26277

## LOOP ANTENNAS

- Collapsible loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c 07 N70-40202
- Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113

## LOOPS

- Endless tape cartridge Patent  
[NASA-CASE-XGS-00769] c 14 N70-41647
- Endless tape transport mechanism Patent  
[NASA-CASE-XGS-01223] c 07 N71-10609
- Filter for third order phase locked loops  
[NASA-CASE-NPO-11941-1] c 10 N73-27171
- High speed shutter — electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c 70 N74-21300
- Means for accommodating large overstrain in lead wires — by storing extra length of wire in stretchable loop  
[NASA-CASE-LAR-10168-1] c 33 N74-22865
- Closed loop spray cooling apparatus  
[NASA-CASE-LEW-11981-2] c 34 N79-20336
- Pseudonoise code tracking loop  
[NASA-CASE-MSC-18035-1] c 32 N81-15179
- Pulsed phase locked loop strain monitor  
[NASA-CASE-LAR-12772-1] c 33 N81-15195

## LOUVERS

- Solar concentrator protective system  
[NASA-CASE-NPO-15682-1] c 44 N82-28785

## LOW ASPECT RATIO

- Landing arrangement for aerial vehicles Patent  
[NASA-CASE-XLA-00142] c 02 N70-33286
- Landing arrangement for aerial vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858



## LOW COST

- Fabrication of polycrystalline solar cells on low-cost substrates  
[NASA-CASE-GSC-12022-1] c 44 N76-28635
- Process for utilizing low-cost graphite substrates for polycrystalline solar cells  
[NASA-CASE-GSC-12022-2] c 44 N78-24609

## LOW CURRENTS

- Low current linearization of magnetic amplifier for dc transducer  
[NASA-CASE-NPO-14617-1] c 33 N81-24338

## LOW DENSITY MATERIALS

- Method and device for detecting voids in low density material Patent  
[NASA-CASE-MFS-20044] c 14 N71-28993
- Intumescent composition, foamed product prepared therewith and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037
- Mixing insert for foam dispensing apparatus  
[NASA-CASE-MFS-20607-1] c 37 N76-19436
- Low density bismaleimide-carbon microballoon composites --- aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184
- Low density bismaleimide-carbon microballoon composites  
[NASA-CASE-ARC-11040-1] c 24 N79-16915
- Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides --- flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116

## LOW FREQUENCIES

- Seismic displacement transducer Patent  
[NASA-CASE-XMF-00479] c 14 N70-34794
- Low-frequency radio navigation system  
[NASA-CASE-NPO-15264-1] c 04 N81-22036

## LOW GRAVITY MANUFACTURING

- Method for manufacturing mirrors in zero gravity environment  
[NASA-CASE-MSC-12611-1] c 12 N76-15189
- Gas levitator and method for containerless processing  
[NASA-CASE-MFS-25509-1] c 34 N82-10359

## LOW MOLECULAR WEIGHTS

- Process for preparation of high-molecular-weight polyaryloxysilanes Patent  
[NASA-CASE-XMF-08674] c 06 N71-28807

## LOW NOISE

- Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c 10 N73-26229
- Reflected-wave maser --- low noise amplifier  
[NASA-CASE-NPO-13490-1] c 36 N76-31512
- Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N82-11359

## LOW PASS FILTERS

- Filtering technique based on high-frequency plant modeling for high-gain control  
[NASA-CASE-LAR-12215-1] c 08 N79-23097
- Smoothing filter for digital to analog conversion  
[NASA-CASE-FRC-11025-1] c 33 N82-24417
- Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539

## LOW PRESSURE

- Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546
- Bakeable McLeod gauge  
[NASA-CASE-XGS-01293-1] c 35 N79-33450

## LOW SPEED

- Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691] c 31 N71-15674
- RC rate generator for slow speed measurement Patent  
[NASA-CASE-XMF-02966] c 10 N78-24863

## LOW TEMPERATURE

- Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103

## LOW TEMPERATURE ENVIRONMENTS

- Frangible electrochemical cell  
[NASA-CASE-XGS-10010] c 03 N72-15986

## LOW TEMPERATURE TESTS

- Low temperature flexure fatigue cryostat Patent  
[NASA-CASE-XMF-02964] c 14 N71-17659
- Horizontal cryostat for fatigue testing Patent  
[NASA-CASE-XMF-10968] c 14 N71-24234
- Heating and cooling system --- for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 39 N80-25693

## LOW THRUST

- Low thrust monopropellant engine  
[NASA-CASE-GSC-12194-2] c 20 N82-18314

## LOW VACUUM

- Vibration damping system Patent  
[NASA-CASE-XMS-01620] c 23 N71-15673

## LOW VOLTAGE

- High speed low level electrical stepping switch Patent  
[NASA-CASE-XAC-00060] c 09 N70-39915

- Flexible blade antenna Patent  
[NASA-CASE-MSC-12101] c 09 N71-18720
- Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366

## LUBRICANTS

- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-01765] c 18 N71-10772
- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-10337] c 15 N71-24046
- Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098
- Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c 37 N74-21058
- Journal bearings --- for lubricant films  
[NASA-CASE-LEW-11076-1] c 37 N74-21061
- Method for milling and drilling glass  
[NASA-CASE-GSC-12636-1] c 37 N80-29705

## LUBRICATING OILS

- Foil seal Patent  
[NASA-CASE-XLE-05130-2] c 15 N71-19570

## LUBRICATION

- Production of hollow components for rolling element bearings by diffusion welding  
[NASA-CASE-LEW-11026-1] c 15 N73-33383
- Variable resistance constant tension and lubrication device --- using oil-saturated leather wiper  
[NASA-CASE-KSC-10723-1] c 37 N75-13265
- Fluid journal bearings  
[NASA-CASE-LEW-11076-4] c 37 N76-15461

## LUBRICATION SYSTEMS

- Hybrid lubrication system and bearing Patent  
[NASA-CASE-XNP-01641] c 15 N71-22997
- Fluid lubricant system Patent  
[NASA-CASE-XNP-03972] c 15 N71-23048
- Journal Bearings  
[NASA-CASE-LEW-11076-2] c 37 N74-32921
- Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12321-1] c 37 N78-10467

## LUMINAIRES

- Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c 31 N69-27499
- Ultraviolet resonance lamp Patent  
[NASA-CASE-ARC-10030] c 09 N71-12521
- Lamp modulator  
[NASA-CASE-KSC-10565] c 09 N72-25250
- Driving lamps by induction  
[NASA-CASE-MFS-21214-1] c 09 N73-30181
- Uniform variable light source  
[NASA-CASE-NPO-11429-1] c 74 N77-21941
- Direct current ballast circuit for metal halide lamp  
[NASA-CASE-MSC-18407-1] c 33 N82-24427

## LUMINOSITY

- Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976

## LUMINOUS INTENSITY

- Motion picture camera for optical pyrometry Patent  
[NASA-CASE-XLA-00062] c 14 N70-33254
- Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c 14 N71-23797
- Continuous plasma laser --- method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma  
[NASA-CASE-XNP-04167-3] c 36 N77-19416
- Solar cell assembly --- for use under high intensity illumination  
[NASA-CASE-LEW-11549-1] c 44 N77-19571

- Compact, high intensity arc lamp with internal magnetic field producing means  
[NASA-CASE-NPO-11510-1] c 33 N77-21315
- System for the measurement of ultra-low stray light levels --- determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865

## LUNAR BASES

- Self-adjusting multisegment, deployable, natural circulation radiator Patent  
[NASA-CASE-XHQ-03673] c 33 N71-29046

## LUNAR COMMUNICATION

- Television signal scan rate conversion system Patent  
[NASA-CASE-XMS-07168] c 07 N71-11300

- Emergency lunar communications system  
[NASA-CASE-MFS-21042] c 07 N72-25171

## LUNAR COMPOSITION

- Lunar penetrometer Patent  
[NASA-CASE-XLA-00934] c 14 N71-22765

## LUNAR EXPLORATION

- Backpack carrier Patent  
[NASA-CASE-LAR-10056] c 05 N71-12351
- Lunar penetrometer Patent  
[NASA-CASE-XLA-00934] c 14 N71-22765
- Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c 28 N71-27585

- Emergency lunar communications system  
[NASA-CASE-MFS-21042] c 07 N72-25171

## LUNAR GRAVITATION

- Subgravity simulator Patent  
[NASA-CASE-XMS-04798] c 11 N71-21474

## LUNAR GRAVITY SIMULATOR

- Impact simulator Patent  
[NASA-CASE-XLA-00493] c 11 N70-34786

## LUNAR LANDING

- Lunar landing flight research vehicle Patent  
[NASA-CASE-XFR-00929] c 31 N70-34966

## LUNAR LOGISTICS

- Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c 28 N71-27585

## LUNAR ROCKS

- Sample collecting impact bit Patent  
[NASA-CASE-XNP-01412] c 15 N70-42034

## LUNAR SOIL

- Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c 15 N71-20440
- Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036
- Self-recording portable soil penetrometer  
[NASA-CASE-MFS-20774] c 14 N73-19420
- Method for obtaining oxygen from lunar or similar soil  
[NASA-CASE-MSC-12408-1] c 46 N74-13011

## LUNAR SURFACE VEHICLES

- Deformable vehicle wheel Patent  
[NASA-CASE-MFS-20400] c 31 N71-18611
- Resilient wheel Patent  
[NASA-CASE-MFS-13929] c 15 N71-27091

## LUNGS

- Instrument for use in performing a controlled Valsalva maneuver Patent  
[NASA-CASE-XMS-01615] c 05 N70-41329

## M

## MACH NUMBER

- Wind tunnel supplementary Mach number minimum section insert  
[NASA-CASE-LAR-12532-1] c 09 N82-11088

## MACHINE TOOLS

- Rock drill for recovering samples  
[NASA-CASE-XNP-07478] c 14 N69-21923
- Protective device for machine and metalworking tools Patent  
[NASA-CASE-XLE-01092] c 15 N71-22797
- Aligning and positioning device Patent  
[NASA-CASE-XMS-04178] c 15 N71-22798
- Extrusion die for refractory metals Patent  
[NASA-CASE-XLE-06773] c 15 N71-23817
- Layout tool Patent  
[NASA-CASE-FRC-10005] c 15 N71-26145
- Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673
- Caterpillar micro positioner  
[NASA-CASE-GSC-10780-1] c 14 N72-16283
- Geneva mechanism --- including star wheel and driver  
[NASA-CASE-NPO-13281-1] c 37 N75-13266
- Zero torque gear head wrench  
[NASA-CASE-NPO-13059-1] c 37 N76-20480
- Precision alignment apparatus for cutting a workpiece  
[NASA-CASE-LAR-11658-1] c 37 N77-14478
- Toggle mechanism for pinching metal tubes  
[NASA-CASE-GSC-12274-1] c 37 N79-28550
- Method and tool for machining a transverse slot about a bore  
[NASA-CASE-LAR-11855-1] c 37 N81-14319
- Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12619-1] c 37 N81-16470
- Precision reciprocating filament chopper  
[NASA-CASE-LAR-12564-2] c 37 N82-18604
- Crystal cleaving machine  
[NASA-CASE-GSC-12584-1] c 37 N82-32730

## MACHINERY

- Stirring apparatus for plural test tubes Patent  
[NASA-CASE-XAC-06956] c 15 N71-21177
- Precipitation detector Patent  
[NASA-CASE-XLA-02619] c 10 N71-26334
- Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32917

## MACHINING

- Laser machining apparatus Patent  
[NASA-CASE-HGN-10541-2] c 15 N71-27135
- Lathe tool bit and holder for machining fiberglass materials  
[NASA-CASE-XLA-10470] c 15 N72-21489
- Drilled ball bearing with a one piece anti-tipping cage assembly  
[NASA-CASE-LEW-11925-1] c 37 N75-31446

## MAGNESIUM

- Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446



## MAGNESIUM ALLOYS

- Method and apparatus for bonding a plastics sleeve onto a metallic body Patent  
[NASA-CASE-XLA-01262] c 15 N71-21404
- Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446

## MAGNESIUM OXIDES

- Method for determining presence of OH in magnesium oxide  
[NASA-CASE-NPO-10774] c 06 N72-17095

## MAGNET COILS

- Superconducting alternator  
[NASA-CASE-XLE-02824] c 03 N69-39890
- Circuit breaker utilizing magnetic latching relays Patent  
[NASA-CASE-MS-11277] c 09 N71-29008

## MAGNETIC AMPLIFIERS

- Low current linearization of magnetic amplifier for dc transducer  
[NASA-CASE-NPO-14617-1] c 33 N81-24338

## MAGNETIC CHARGE DENSITY

- Electrostatic ion engine having a permanent magnetic circuit Patent  
[NASA-CASE-XLE-01124] c 28 N71-14043

## MAGNETIC CIRCUITS

- Electrostatic ion engine having a permanent magnetic circuit Patent  
[NASA-CASE-XLE-01124] c 28 N71-14043

## MAGNETIC COILS

- Time-division multiplexer Patent  
[NASA-CASE-XNP-00431] c 09 N70-38998
- Linear magnetic brake with two windings Patent  
[NASA-CASE-XLE-05079] c 15 N71-17652
- Safe-arm initiator Patent  
[NASA-CASE-LAR-10372] c 09 N71-18599
- Magnifying image intensifier  
[NASA-CASE-GSC-12010-1] c 74 N78-18905

## MAGNETIC CONTROL

- Fast opening diaphragm Patent  
[NASA-CASE-XLA-03660] c 15 N71-21060
- Magnetically controlled plasma accelerator Patent  
[NASA-CASE-XLA-00327] c 25 N71-29184
- Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c 37 N76-18459
- Magnetic bearing system  
[NASA-CASE-GSC-11978-1] c 37 N77-17464
- Low temperature latching solenoid  
[NASA-CASE-MS-18106-1] c 33 N82-11357

## MAGNETIC CORES

- Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00458] c 09 N70-38604
- Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00131] c 09 N70-38995
- Magnetic counter Patent  
[NASA-CASE-XNP-08836] c 09 N71-12515
- Pulse-type magnetic core memory element circuit with blocking oscillator feedback Patent  
[NASA-CASE-XGS-03303] c 08 N71-18595
- Magnetic core current steering commutator Patent  
[NASA-CASE-NPO-10201] c 08 N71-18694
- Drive circuit utilizing two cores Patent  
[NASA-CASE-XNP-01318] c 10 N71-23033
- Saturation current protection apparatus for saturable core transformers Patent  
[NASA-CASE-ERC-10075] c 09 N71-24800
- Magnetic power switch Patent  
[NASA-CASE-NPO-10242] c 09 N71-24803
- Unsaturating saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24893
- Thermally cycled magnetometer Patent  
[NASA-CASE-XAC-03740] c 14 N71-26135
- Digital memory sense amplifying means Patent  
[NASA-CASE-XNP-01012] c 08 N71-28925
- Method of detecting impending saturation of magnetic cores  
[NASA-CASE-ERC-10089] c 23 N72-17747
- Current steering commutator  
[NASA-CASE-NPO-10743] c 08 N72-21199
- Banded transformer cores  
[NASA-CASE-NPO-11966-1] c 33 N74-17928

## MAGNETIC DIPOLES

- Balance torque meter Patent  
[NASA-CASE-XGS-01013] c 14 N71-23725

## MAGNETIC DISKS

- Disk pack clearing table Patent Application  
[NASA-CASE-LAR-10590-1] c 15 N70-26819

## MAGNETIC FIELD CONFIGURATIONS

- Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c 35 N77-14406
- Magnifying image intensifier  
[NASA-CASE-GSC-12010-1] c 74 N78-18905

- Linear magnetic bearings — active magnetic suspension of armatures  
[NASA-CASE-GSC-12582-1] c 37 N81-16469

## MAGNETIC FIELDS

- Electric-arc heater Patent  
[NASA-CASE-XLA-00330] c 33 N70-34540
- Means for communicating through a layer of ionized gases Patent  
[NASA-CASE-XLA-01127] c 07 N70-41372
- Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41646
- Electrostatic ion engine having a permanent magnetic circuit Patent  
[NASA-CASE-XLE-01124] c 28 N71-14043
- Wide range linear fluxgate magnetometer Patent  
[NASA-CASE-XGS-01587] c 14 N71-15962
- Position sensing device employing misaligned magnetic field generating and detecting apparatus Patent  
[NASA-CASE-XGS-07514] c 23 N71-16099
- Nonmagnetic, explosive actuated indexing device Patent  
[NASA-CASE-XGS-02422] c 15 N71-21529
- Solar cell and circuit array and process for nullifying magnetic fields Patent  
[NASA-CASE-XGS-03390] c 03 N71-23187
- Balance torque meter Patent  
[NASA-CASE-XGS-01013] c 14 N71-23725
- Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c 14 N71-27325
- Segmented superconducting magnet for a broadband traveling wave maser Patent  
[NASA-CASE-XGS-10518] c 16 N71-28554
- Magnetic position detection method and apparatus  
[NASA-CASE-ARC-10179-1] c 21 N72-22619
- Ion thruster  
[NASA-CASE-LEW-10770-1] c 28 N72-22770
- Ion thruster magnetic field control  
[NASA-CASE-LEW-10835-1] c 28 N72-22771
- Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175
- Superconductive magnetic-field-trapping device  
[NASA-CASE-XNP-01185] c 26 N73-28710
- Electron beam controller — using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c 33 N74-10195
- Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c 35 N76-16390
- Compact, high intensity arc lamp with internal magnetic field producing means  
[NASA-CASE-NPO-11510-1] c 33 N77-21315
- Magnetic heat pumping  
[NASA-CASE-LEW-12508-1] c 34 N78-17335
- Atomic hydrogen storage — cryotrapping and magnetic field strength  
[NASA-CASE-LEW-12081-2] c 28 N80-20402
- Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103
- Magnetic field control — electromechanical torquing device  
[NASA-CASE-MFS-23828-1] c 33 N82-26569

## MAGNETIC FILMS

- Manganese bismuth films with narrow transfer characteristics for Cune-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678

## MAGNETIC FLUX

- Excitation and detection circuitry for a flux responsive magnetic head  
[NASA-CASE-XNP-04183] c 09 N69-24329
- Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423
- Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon Patent  
[NASA-CASE-XGS-01881] c 09 N70-40123
- Hybrid lubrication system and bearing Patent  
[NASA-CASE-XNP-01641] c 15 N71-22997
- Saturation current protection apparatus for saturable core transformers Patent  
[NASA-CASE-ERC-10075] c 09 N71-24800
- Continuous magnetic flux pump  
[NASA-CASE-XNP-01187] c 15 N73-28516
- Magnetic flux pump  
[NASA-CASE-XNP-01188] c 15 N73-32361
- Magnetic bearing — for supplying magnetic fluxes  
[NASA-CASE-GSC-11079-1] c 37 N75-18574
- Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 33 N81-22279
- Linear magnetic motor/generator — to generate electric energy using magnetic flux for spacecraft power supply  
[NASA-CASE-GSC-12518-1] c 33 N82-24421

## MAGNETIC FORMING

- Magnetomotive metal working device Patent  
[NASA-CASE-XMF-03793] c 15 N71-24833
- Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-3] c 15 N71-24865

## MAGNETIC INDUCTION

- Continuously operating induction plasma accelerator Patent  
[NASA-CASE-XLA-01354] c 25 N70-36946
- Drive circuit for minimizing power consumption in inductive load Patent  
[NASA-CASE-NPO-10716] c 09 N71-24892
- Constant frequency output two stage induction machine systems Patent  
[NASA-CASE-ERC-10065] c 09 N71-27364
- Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235
- High speed shutter — electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c 70 N74-21300

## MAGNETIC LENSES

- Quadrupole mass filter with means to generate a noise spectrum exclusive of the resonant frequency of the desired ions to deflect stable ions  
[NASA-CASE-XNP-04231] c 14 N73-32325

## MAGNETIC MATERIALS

- Low viscosity magnetic fluid obtained by the colloidal suspension of magnetic particles Patent  
[NASA-CASE-XLE-01512] c 12 N70-40124

## MAGNETIC MEASUREMENT

- Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423
- Wide range linear fluxgate magnetometer Patent  
[NASA-CASE-XAC-01587] c 14 N71-15962
- RC networks and amplifiers employing the same  
[NASA-CASE-XAC-05462-2] c 10 N72-17171
- Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c 35 N76-16390
- Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 04 N82-26260

## MAGNETIC POLES

- Magnetohydrodynamic induction machine  
[NASA-CASE-XNP-07481] c 25 N69-21929
- Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c 35 N77-14406

## MAGNETIC PUMPING

- Continuous magnetic flux pump  
[NASA-CASE-XNP-01187] c 15 N73-28516
- Magnetic flux pump  
[NASA-CASE-XNP-01188] c 15 N73-32361
- Magnetocaloric pump — for cryogenic fluids  
[NASA-CASE-LEW-11672-1] c 37 N74-27904
- Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N82-24449

## MAGNETIC RECORDING

- Incremental tape recorder and data rate converter Patent  
[NASA-CASE-XNP-02778] c 08 N71-22710
- Magnetic recording head and method of making same Patent  
[NASA-CASE-GSC-10097-1] c 08 N71-27210
- Thermomagnetic recording and magnetic-optic playback system  
[NASA-CASE-NPO-10872-1] c 35 N79-16246
- Manganese bismuth films with narrow transfer characteristics for Cune-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678

## MAGNETIC SIGNALS

- Plural recorder system  
[NASA-CASE-XMS-06949] c 09 N69-21467

## MAGNETIC STORAGE

- Binary magnetic memory device Patent  
[NASA-CASE-XGS-00174] c 08 N70-34743
- Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c 08 N71-12504
- Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418
- Redundant memory organization Patent  
[NASA-CASE-GSC-10564] c 10 N71-29135
- Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c 21 N73-13644
- Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-1] c 28 N78-24365

## MAGNETIC SUSPENSION

- Magnetic suspension and pointing system  
[NASA-CASE-LAR-11889-2] c 37 N78-27424
- Magnetic suspension and pointing system — on a carrier vehicle  
[NASA-CASE-LAR-11889-1] c 35 N79-26372



- Containerless melting and rapid solidification apparatus and method  
[NASA-CASE-MFS-25305-1] c 35 N81-16427
- Linear magnetic bearings — active magnetic suspension of armatures  
[NASA-CASE-GSC-12582-1] c 37 N81-16469
- Stirling cycle cryogenic cooler — magnetically suspended pistons  
[NASA-CASE-GSC-12697-1] c 31 N82-11312
- Magnetic bearing and motor  
[NASA-CASE-GSC-12725-1] c 37 N82-29603
- MAGNETIC SWITCHING**  
Magnetic power switch Patent  
[NASA-CASE-NPO-10242] c 09 N71-24803
- Current steering switch Patent  
[NASA-CASE-XNP-08567] c 09 N71-26000
- MAGNETIC TAPE TRANSPORTS**  
Reel safety brake  
[NASA-CASE-GSC-11960-1] c 37 N77-14479
- MAGNETIC TAPES**  
Endless tape cartridge Patent  
[NASA-CASE-XGS-00769] c 14 N70-41647
- Endless tape transport mechanism Patent  
[NASA-CASE-XGS-01223] c 07 N71-10609
- Low friction magnetic recording tape Patent  
[NASA-CASE-XGS-00373] c 23 N71-15978
- System for recording and reproducing pulse code modulated data Patent  
[NASA-CASE-XGS-01021] c 08 N71-21042
- Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c 14 N71-22995
- Technique for recovery of voice data from heat damaged magnetic tape  
[NASA-CASE-MS-14219-1] c 32 N74-27612
- Automatic character skew and spacing checking network — of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c 33 N76-18353
- MAGNETIC TRANSDUCERS**  
Magnetometer with a miniature transducer and automatic scanning  
[NASA-CASE-LAR-11617-2] c 35 N78-32397
- MAGNETIZATION**  
Ion engine casing construction and method of making — same Patent  
[NASA-CASE-XNP-06942] c 28 N71-23293
- MAGNETO-OPTICS**  
Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c 36 N74-13205
- MAGNETOHYDRODYNAMIC FLOW**  
Magneto-plasma-dynamic arc thruster  
[NASA-CASE-LEW-11180-1] c 25 N73-25760
- MAGNETOHYDRODYNAMIC GENERATORS**  
Magnetohydrodynamic induction machine  
[NASA-CASE-XNP-07481] c 25 N69-21929
- Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983
- Two-fluid magnetohydrodynamic system and method for thermal-electric power conversion Patent  
[NASA-CASE-XNP-00644] c 03 N70-36803
- Crossed-field MHD plasma generator/accelerator Patent  
[NASA-CASE-XLA-03374] c 25 N71-15562
- Solar driven liquid metal MHD power generator  
[NASA-CASE-LAR-12495-1] c 44 N81-32609
- MHD electrical generator  
[NASA-CASE-NPO-15399-1] c 75 N82-24079
- MAGNETOMETERS**  
Nonmagnetic thermal motor for a magnetometer  
[NASA-CASE-XAR-03786] c 09 N69-21313
- Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423
- Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon Patent  
[NASA-CASE-XGS-01881] c 09 N70-40123
- Wide range linear fluxgate magnetometer Patent  
[NASA-CASE-XGS-01587] c 14 N71-15962
- Optically pumped resonance magnetometer for determining vectorial components in a spatial coordinate system Patent  
[NASA-CASE-XGS-04879] c 14 N71-20428
- Thermally cycled magnetometer Patent  
[NASA-CASE-XAC-03740] c 14 N71-26135
- Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c 14 N71-27325
- Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c 35 N75-13213
- Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c 35 N76-16390
- Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c 04 N76-20114
- Magnetic heading reference  
[NASA-CASE-LAR-11387-2] c 04 N77-19056
- Magnetometer with a miniature transducer and automatic scanning  
[NASA-CASE-LAR-11617-2] c 35 N78-32397
- A low energy electron magnetometer  
[NASA-CASE-LAR-12706-1] c 35 N81-19428
- Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716
- MAGNETRONS**  
Turning arrangement for an electron discharge device or the like Patent  
[NASA-CASE-XNP-09771] c 09 N71-24841
- MAGNETS**  
Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772
- Miniature cyclotron resonance ion source using small permanent magnet  
[NASA-CASE-NPO-14324-1] c 72 N80-27163
- Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 33 N81-22279
- A brushless dc tachometer  
[NASA-CASE-NPO-15706-1] c 35 N82-26633
- MAGNIFICATION**  
Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474
- Magnifying scratch gage force transducer  
[NASA-CASE-LAR-10496-1] c 14 N72-22437
- Magnifying image intensifier  
[NASA-CASE-GSC-12010-1] c 74 N78-18905
- Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072
- MAGNITUDE**  
Balance torquemeter Patent  
[NASA-CASE-XGS-01013] c 14 N71-23725
- MAINTENANCE**  
Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633
- Bonding or repairing process  
[NASA-CASE-MS-12357] c 15 N73-12489
- Method of repairing discontinuity in fiberglass structures  
[NASA-CASE-LAR-10416-1] c 24 N74-30001
- System and method for refurbishing and processing parachutes — monorail conveyor system  
[NASA-CASE-KSC-11042-2] c 02 N81-26073
- Method of repairing surface damage to porous refractory substrates — shuttle orbiter tiles  
[NASA-CASE-MS-18736-1] c 27 N81-29231
- Computer circuit card puller  
[NASA-CASE-FRC-11042-1] c 60 N82-24839
- Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330
- Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520
- MALFUNCTIONS**  
Airplane take-off performance indicator Patent  
[NASA-CASE-XLA-00100] c 14 N70-36807
- MANDRELS**  
Mandrel for shaping solid propellant rocket fuel into a motor casing Patent  
[NASA-CASE-XLA-00304] c 27 N70-34783
- Rotating mandrel for assembly of inflatable devices Patent  
[NASA-CASE-XLA-04143] c 15 N71-17687
- Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779
- MANGANESE**  
Manganese bismuth films with narrow transfer characteristics for Cune-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678
- MANIFOLDS**  
Injector for bipropellant rocket engines Patent  
[NASA-CASE-XMF-00148] c 28 N70-38710
- Collimated beam manifold and method for using the same — laser beams  
[NASA-CASE-MFS-25312-1] c 74 N80-34251
- Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366
- MANIPULATORS**  
Remote control manipulator for zero gravity environment  
[NASA-CASE-MFS-14405] c 15 N72-28495
- Orthotic arm joint — for use in mechanical arms  
[NASA-CASE-MFS-21611-1] c 54 N75-12616
- Variable ratio mixed-mode bilateral master-slave control system for shuttle remote manipulator system  
[NASA-CASE-MS-14245-1] c 18 N75-27041
- Cooperative multiaxis sensor for teleoperation of article manipulating apparatus  
[NASA-CASE-NPO-13386-1] c 54 N75-27758
- Remotely operable articulated manipulator  
[NASA-CASE-MFS-22707-1] c 37 N76-15457
- Remote manipulator system  
[NASA-CASE-MFS-22022-1] c 37 N76-15460
- Anthropomorphic master/slave manipulator system  
[NASA-CASE-ARC-10756-1] c 54 N77-32721
- Wrist joint assembly  
[NASA-CASE-MFS-23311-1] c 54 N78-17676
- Terminal guidance sensor system  
[NASA-CASE-NPO-14521-1] c 54 N79-20746
- Compact artificial hand  
[NASA-CASE-NPO-13906-1] c 54 N79-24652
- Controller arm for a remotely related slave arm  
[NASA-CASE-ARC-11052-1] c 37 N79-28551
- Device for coupling a first vehicle to a second vehicle  
[NASA-CASE-GSC-12429-1] c 37 N81-14320
- Tactile sensing system — manipulator controllers  
[NASA-CASE-NPO-15094-1] c 33 N81-16386
- Pneumatic inflatable end effector  
[NASA-CASE-MFS-23696-1] c 54 N81-26718
- Terminal guidance sensor system — space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519
- Apparatus for sequentially transporting containers  
[NASA-CASE-MFS-23846-1] c 37 N82-32731
- MANNED ORBITAL LABORATORIES**  
Rotating space station simulator Patent  
[NASA-CASE-XLA-03127] c 11 N71-10776
- MANNED ORBITAL RESEARCH LABORATORIES**  
Erectable modular space station Patent  
[NASA-CASE-XLA-00678] c 31 N70-34296
- Radial module space station Patent  
[NASA-CASE-XMS-01906] c 31 N70-41373
- MANNED SPACE FLIGHT**  
Transfer valve Patent  
[NASA-CASE-XAC-01158] c 15 N71-23051
- Air removal device  
[NASA-CASE-XLA-8914] c 15 N73-12482
- MANNED SPACECRAFT**  
Space capsule Patent  
[NASA-CASE-XLA-00149] c 31 N70-37938
- Variable-geometry winged reentry vehicle Patent  
[NASA-CASE-XLA-00241] c 31 N70-37986
- Vehicle parachute and equipment jettison system Patent  
[NASA-CASE-XLA-00195] c 02 N70-38009
- Space capsule Patent  
[NASA-CASE-XLA-01332] c 31 N71-15664
- Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881
- Specialized halogen generator for purification of water Patent  
[NASA-CASE-XLA-08913] c 14 N71-28933
- Collapsible Apollo couch  
[NASA-CASE-MS-13140] c 05 N72-11085
- Space vehicle with artificial gravity and earth-like environment  
[NASA-CASE-LEW-11101-1] c 31 N73-32750
- MANOMETERS**  
Magnetically centered liquid column float Patent  
[NASA-CASE-XAC-00030] c 14 N70-34820
- Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c 14 N73-30394
- MANUAL CONTROL**  
Multiple circuit switch apparatus with improved pivot actuator structure Patent  
[NASA-CASE-XAC-03777] c 10 N71-15909
- Null device for hand controller Patent  
[NASA-CASE-XLA-01808] c 15 N71-20740
- Manually actuated heat pump  
[NASA-CASE-NPO-10677] c 05 N72-11084
- Numerical computer peripheral interactive device with manual controls  
[NASA-CASE-NPO-11497] c 08 N73-25206
- Solid state controller three axes controller  
[NASA-CASE-MS-12394-1] c 08 N74-10942
- G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c 35 N75-29381
- Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205
- MANUFACTURING**  
A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148
- Indexed keyed connection Patent  
[NASA-CASE-XMS-02532] c 15 N70-41808
- Method of making screen by casting Patent  
[NASA-CASE-XLE-00953] c 15 N71-15966
- Space manufacturing machine Patent  
[NASA-CASE-MFS-20410] c 15 N71-19214
- Fluid containers and resealable septum therefor Patent  
[NASA-CASE-NPO-10123] c 15 N71-24835
- Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779
- Method of making shielded flat cable Patent  
[NASA-CASE-MFS-13687] c 09 N71-28691



Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c 17 N71-29137  
Method of making porous conductive supports for electrodes — by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692  
Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32917  
Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260  
Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c 76 N76-25049  
Solar hydrogen generator  
[NASA-CASE-LAR-11361-1] c 44 N77-22607  
Method of forming shrink-fit compression seal  
[NASA-CASE-LAR-11563-1] c 37 N77-23482  
Method for making a hot wire anemometer and product thereof  
[NASA-CASE-ARC-10900-1] c 35 N77-24454  
Aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-3] c 44 N80-16452  
Polymeric compositions and their method of manufacture — forming filled polymer systems using cryogenics  
[NASA-CASE-NPO-10424-1] c 27 N81-24258  
Inorganic spark chamber frame and method of making the same  
[NASA-CASE-GSC-12354-1] c 35 N82-24471  
Photoelectric detection system — manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545

## MAPPING

Random function tracer Patent  
[NASA-CASE-XLA-01401] c 15 N71-21179  
Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118  
Seismic vibration source  
[NASA-CASE-NPO-14112-1] c 46 N79-22679

## MAPS

Orbital and entry tracking accessory for globes — to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015  
Optical process for producing classification maps from multispectral data  
[NASA-CASE-MSC-14472-1] c 43 N77-10584

## MASERS

Segmented superconducting magnet for a broadband traveling wave maser Patent  
[NASA-CASE-XGS-10518] c 16 N71-28554  
Maser for frequencies in the 7-20 GHz range  
[NASA-CASE-NPO-11437] c 16 N72-28521  
Reflected-wave maser — low noise amplifier  
[NASA-CASE-NPO-13490-1] c 36 N76-31512  
Multistation refrigeration system  
[NASA-CASE-NPO-13839-1] c 31 N78-25256  
External bulb variable volume maser  
[NASA-CASE-GSC-12334-1] c 36 N79-14362  
Dielectric-loaded waveguide circulator for cryogenically cooled and cascaded maser waveguide structures  
[NASA-CASE-NPO-14254-1] c 36 N80-18372  
Precise RF timing signal distribution to remote stations — fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186  
Maser amplifier slow wave structure — detecting weak signals from spacecraft  
[NASA-CASE-NPO-15211-1] c 36 N81-24425  
Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N81-24426

## MASKING

Masking device Patent  
[NASA-CASE-XNP-02092] c 15 N70-42033  
High resolution developing of photosensitive resists Patent  
[NASA-CASE-XGS-04993] c 14 N71-17574

## MASS

Mass measuring system Patent  
[NASA-CASE-XMS-03371] c 05 N70-42000  
Dynamic vibration absorber Patent  
[NASA-CASE-LAR-10083-1] c 15 N71-27006  
Fluid mass sensor for a zero gravity environment  
[NASA-CASE-MSC-14653-1] c 35 N77-19385

## MASS BALANCE

Two-plane balance Patent  
[NASA-CASE-XAC-00073] c 14 N70-34813  
Apparatus for testing a pressure responsive instrument Patent  
[NASA-CASE-XMF-04134] c 14 N71-23755

## MASS DISTRIBUTION

Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339

## MASS FLOW

Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736

Nuclear mass flowmeter  
[NASA-CASE-MFS-20485] c 14 N72-11365  
Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10578-1] c 12 N73-25262

## MASS SPECTROMETERS

Analytical photoionization mass spectrometer with an argon gas filter between the light source and monochromator Patent  
[NASA-CASE-LAR-10180-1] c 06 N71-13461  
Time of flight mass spectrometer with feedback means from the detector to the low source and a specific counter Patent  
[NASA-CASE-XNP-01056] c 14 N71-23041  
Ion microprobe mass spectrometer for analyzing fluid materials Patent  
[NASA-CASE-ERC-10014] c 14 N71-28863  
Orifice gross leak tester Patent  
[NASA-CASE-ERC-10150] c 14 N71-28992  
Method and apparatus for determining the contents of contained gas samples  
[NASA-CASE-GSC-10903-1] c 14 N73-12444  
Quadrupole mass filter with means to generate a noise spectrum exclusive of the resonant frequency of the desired ions to deflect stable ions  
[NASA-CASE-XNP-04231] c 14 N73-32325  
Fast scan control for deflection type mass spectrometers  
[NASA-CASE-LAR-11428-1] c 35 N74-34857  
Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c 35 N77-14406  
Method for fabricating a mass spectrometer inlet leak  
[NASA-CASE-GSC-12077-1] c 35 N77-24455  
Dual acting slit control mechanism  
[NASA-CASE-LAR-11370-1] c 35 N80-28686  
Ion mass spectrometer — exploring comet tails  
[NASA-CASE-NPO-15423-1] c 91 N82-25042

## MASS SPECTROSCOPY

Moving particle composition analyzer  
[NASA-CASE-GSC-11889-1] c 35 N76-16393  
Fluid sampling device  
[NASA-CASE-GSC-12143-1] c 35 N77-32456

## MATERIAL ABSORPTION

Sorption vacuum trap Patent  
[NASA-CASE-XER-09519] c 14 N71-18483

## MATERIALS HANDLING

Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492  
Catalyst bed removing tool Patent  
[NASA-CASE-XFR-00811] c 15 N70-36901  
Air bearing Patent  
[NASA-CASE-XMF-01887] c 15 N71-10617  
Quick attach and release fluid coupling assembly Patent  
[NASA-CASE-XKS-01985] c 15 N71-10782  
Method and apparatus for cryogenic wire stripping Patent  
[NASA-CASE-MFS-10340] c 15 N71-17628  
Apparatus for purging systems handling toxic, corrosive, noxious and other fluids Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089  
Method of making foamed materials in zero gravity  
[NASA-CASE-XMF-09902] c 15 N72-11387  
Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c 03 N72-25021  
Apparatus for recovering matter adhered to a host surface  
[NASA-CASE-NPO-11213] c 15 N73-20514  
Apparatus and method for skin packaging articles  
[NASA-CASE-MFS-20855] c 15 N73-27405  
Apparatus for inserting and removing specimens from high temperature vacuum furnaces  
[NASA-CASE-LAR-10841-1] c 31 N74-27900  
Deployable flexible tunnel  
[NASA-CASE-MFS-22636-1] c 37 N76-22540  
Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441  
Acoustic system for material transport  
[NASA-CASE-NPC-15453-1] c 71 N82-12889

## MATERIALS RECOVERY

Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c 25 N76-18245  
Process for the leaching of AP from propellant  
[NASA-CASE-NPO-14109-1] c 28 N80-23471  
Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

## MATERIALS SCIENCE

Flammability test chamber Patent  
[NASA-CASE-KSC-10126] c 11 N71-24985  
Apparatus and method for measuring the Seebeck coefficient and resistivity of materials  
[NASA-CASE-NPO-11749] c 14 N73-28486

## MATERIALS TESTS

Thermal shock apparatus Patent  
[NASA-CASE-XLE-02024] c 14 N71-22964  
Multiple environment materials test chamber having a multiple port X-ray tube for irradiating a plurality of samples Patent  
[NASA-CASE-XMS-02930] c 11 N71-23042  
Resilience testing device Patent  
[NASA-CASE-XLA-08254] c 14 N71-26161  
Tube sealing device Patent  
[NASA-CASE-NPO-10431] c 15 N71-29132  
Burn rate testing apparatus  
[NASA-CASE-XMS-09690] c 33 N72-25913  
Multi axes vibration fixtures  
[NASA-CASE-MFS-20242] c 14 N73-19421  
Material fatigue testing system  
[NASA-CASE-MFS-20673] c 14 N73-20476

## MATHEMATICAL LOGIC

Logical function generator  
[NASA-CASE-XLA-05099] c 09 N73-13209

## MATRICES (CIRCUITS)

Solar cell submodule Patent  
[NASA-CASE-XNP-05821] c 03 N71-11056  
Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c 08 N71-12504  
Solar cell matrix Patent  
[NASA-CASE-NPO-10821] c 03 N71-19545  
Drive circuit utilizing two cores Patent  
[NASA-CASE-XNP-01318] c 10 N71-23033  
Serial digital decoder Patent  
[NASA-CASE-NPO-10150] c 08 N71-24650  
Solid state matrices  
[NASA-CASE-NPO-10591] c 03 N72-22041

## MCLEOD GAGES

Automatic recording McLeod gauge Patent  
[NASA-CASE-XLE-03280] c 14 N71-23093  
Bakeable McLeod gauge  
[NASA-CASE-XGS-01293-1] c 35 N79-33450

## MEASURING INSTRUMENTS

Device for determining the accuracy of the flare on a flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785  
Angular measurement system Patent  
[NASA-CASE-XMF-00447] c 14 N70-33179  
Two-plane balance Patent  
[NASA-CASE-XAC-00073] c 14 N70-34813  
Parallel motion suspension device Patent  
[NASA-CASE-XNP-01567] c 15 N70-41310  
Vibrating structure displacement measuring instrument Patent  
[NASA-CASE-XLA-03135] c 32 N71-16428  
Inspection gage for boss Patent  
[NASA-CASE-XMF-04966] c 14 N71-17658  
Vapor pressure measuring system and method Patent  
[NASA-CASE-XMS-01618] c 14 N71-20741  
Spherical tank gauge Patent  
[NASA-CASE-XMS-06236] c 14 N71-21007  
Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c 15 N71-22877  
Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991  
Moment of inertia test fixture Patent  
[NASA-CASE-XGS-01023] c 14 N71-22992  
Electron beam instrument for measuring electric fields Patent  
[NASA-CASE-XMF-10289] c 14 N71-23699  
Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790  
Internal flare angle gauge Patent  
[NASA-CASE-XMF-04415] c 14 N71-24693  
RC rate generator for slow speed measurement Patent  
[NASA-CASE-XMF-02966] c 10 N71-24863  
Transverse piezoresistance and pinch effect electromechanical transducers Patent  
[NASA-CASE-ERC-10088] c 26 N71-25490  
Layout tool Patent  
[NASA-CASE-FRC-10005] c 15 N71-26145  
Method and apparatus for detecting gross leaks Patent  
[NASA-CASE-ERC-10033] c 14 N71-26672  
Arbitrarily shaped model survey system Patent  
[NASA-CASE-LAR-10098] c 32 N71-26681  
Thickness measuring and injection device Patent  
[NASA-CASE-MFS-20261] c 14 N71-27005  
Resonant infrasonic gauging apparatus  
[NASA-CASE-MSC-11847-1] c 14 N72-11363  
Roll alignment detector  
[NASA-CASE-GSC-10514-1] c 14 N72-20379  
Cosmic dust sensor  
[NASA-CASE-GSC-10503-1] c 14 N72-20381  
Firefly pump-metering system  
[NASA-CASE-GSC-10218-1] c 15 N72-21465



Capacitive tank gaging apparatus being independent of liquid distribution  
[NASA-CASE-MFS-21629] c 14 N72-22442

Spherical measurement device  
[NASA-CASE-XLA-06683] c 14 N72-28436

Altitude measuring system  
[NASA-CASE-ERC-10412-1] c 09 N73-12211

Flow velocity and directional instrument  
[NASA-CASE-LAR-10855-1] c 14 N73-13415

Multi axes vibration fixtures  
[NASA-CASE-MFS-20242] c 14 N73-19421

Material fatigue testing system  
[NASA-CASE-MFS-20673] c 14 N73-20476

Droplet monitoring probe  
[NASA-CASE-NPO-10985] c 14 N73-20478

Apparatus and method for measuring the Seebeck coefficient and resistivity of materials  
[NASA-CASE-NPO-11749] c 14 N73-28486

RF-source resistance meters  
[NASA-CASE-NPO-11291-1] c 14 N73-30388

Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c 14 N73-30394

Holographic thin film analyzer  
[NASA-CASE-MFS-20823-1] c 16 N73-30476

Three-axis adjustable loading structure  
[NASA-CASE-FRC-10051-1] c 35 N74-13129

Thin film gauge --- for measuring convective heat transfer rates along test surfaces in wind tunnels  
[NASA-CASE-NPO-10617-1] c 35 N74-22095

Apparatus and method for processing Korotkov sounds for blood pressure measurement  
[NASA-CASE-MSC-13999-1] c 52 N74-26626

Electric field measuring and display system --- for cloud formations  
[NASA-CASE-KSC-10731-1] c 33 N74-27862

Device for measuring tensile forces  
[NASA-CASE-MFS-21728-1] c 35 N74-27865

Measuring probe position recorder  
[NASA-CASE-LAR-10806-1] c 35 N74-32877

Meter for use in detecting tension in straps having predetermined elastic characteristics  
[NASA-CASE-MFS-22189-1] c 35 N75-19615

Thrust measurement  
[NASA-CASE-XMS-05731] c 35 N75-29382

Method and apparatus for measuring web material wound on a reel  
[NASA-CASE-GSC-11902-1] c 38 N77-17495

Optical instrument employing reticle having preselected visual response pattern formed thereon  
[NASA-CASE-ARC-10976-1] c 74 N77-22950

Direct reading inductance meter  
[NASA-CASE-NPO-13792-1] c 35 N77-32455

Ruler for making navigational computations  
[NASA-CASE-XNP-01458] c 04 N78-17031

Apparatus for handling micron size range particulate material  
[NASA-CASE-NPO-10151] c 37 N78-17386

Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c 35 N78-19465

Condition sensor system and method  
[NASA-CASE-MSC-14805-1] c 54 N78-32720

Lightning current waveform measuring system  
[NASA-CASE-KSC-11018-1] c 33 N79-10337

Time domain phase measuring apparatus  
[NASA-CASE-GSC-12228-1] c 33 N79-10338

Fluid velocity measuring device  
[NASA-CASE-LAR-11729-1] c 34 N79-12359

Method and apparatus for measuring minority carrier lifetimes and bulk diffusion length in P-N junction solar cells  
[NASA-CASE-NPO-14100-1] c 44 N79-12541

Lightning current detector  
[NASA-CASE-KSC-11057-1] c 33 N79-14305

Contour measurement system  
[NASA-CASE-MFS-23726-1] c 43 N79-26439

Borehole geological assessment  
[NASA-CASE-NPO-14231-1] c 46 N80-10709

Displacement probes with self-contained exciting medium  
[NASA-CASE-LAR-11690-1] c 35 N80-14371

Viscosity measuring instrument  
[NASA-CASE-NPO-14501-1] c 35 N80-18357

Method and device for destructive detection of a substance --- useful in determining the concentration of carbon fibers or pollutant particles  
[NASA-CASE-NPO-14940-1] c 35 N80-21723

Geological assessment probe  
[NASA-CASE-NPO-14558-1] c 46 N80-24906

Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MSC-16777-1] c 51 N80-27067

Skin friction measuring device for aircraft  
[NASA-CASE-FRC-11029-1] c 06 N81-17057

Heat pipe cooled probe  
[NASA-CASE-LAR-12588-1] c 44 N81-24525

Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381

Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779

**MECHANICAL DEVICES**

Mechanical coordinate converter Patent  
[NASA-CASE-XNP-00614] c 14 N70-36907

Load cell protection device Patent  
[NASA-CASE-XMS-06782] c 32 N71-15974

Satellite despin device Patent  
[NASA-CASE-XMF-08523] c 31 N71-20396

Two force component measuring device Patent  
[NASA-CASE-XAC-04886-1] c 14 N71-20439

Latching mechanism Patent  
[NASA-CASE-XMS-03745] c 15 N71-21076

Stirring apparatus for plural test tubes Patent  
[NASA-CASE-XAC-06956] c 15 N71-21177

Random function tracer Patent  
[NASA-CASE-XLA-01401] c 15 N71-21179

Canister closing device Patent  
[NASA-CASE-XLA-01446] c 15 N71-21528

Nonmagnetic, explosive actuated indexing device Patent  
[NASA-CASE-XGS-02422] c 15 N71-21529

Central spar and module joint Patent  
[NASA-CASE-XNP-02341] c 15 N71-21531

Controllers Patent  
[NASA-CASE-XMS-07487] c 15 N71-23255

Alloys for bearings Patent  
[NASA-CASE-XLE-05033] c 15 N71-23810

Mechanical actuator Patent  
[NASA-CASE-XGS-04548] c 15 N71-24045

Winch having cable position and load indicators Patent  
[NASA-CASE-MSC-12052-1] c 15 N71-24599

Redundant actuating mechanism Patent  
[NASA-CASE-XGS-08718] c 15 N71-24600

Shock tube powder dispersing apparatus Patent  
[NASA-CASE-XLE-04946] c 17 N71-24911

Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984

Layout tool Patent  
[NASA-CASE-FRC-10005] c 15 N71-26145

Thermostatic actuator  
[NASA-CASE-NPO-10637] c 15 N72-12409

Ball screw linear actuator  
[NASA-CASE-NPO-11222] c 15 N72-25456

Spherical measurement device  
[NASA-CASE-XLA-06683] c 14 N72-28436

Thermal compensating structural member  
[NASA-CASE-MFS-20433] c 15 N72-28496

Spiral groove seal  
[NASA-CASE-XLE-10326-2] c 15 N72-29488

Solar energy powered heliostropes  
[NASA-CASE-GSC-10945-1] c 21 N72-31637

Adjustable force probe  
[NASA-CASE-MFS-20760] c 14 N72-33377

Rotary actuator  
[NASA-CASE-NPO-10680] c 31 N73-14855

Collapsible structure for an antenna reflector  
[NASA-CASE-NPO-11751] c 07 N73-24176

Foot pedal operated fluid type exercising device  
[NASA-CASE-MSC-11561-1] c 05 N73-32014

Exposure interlock for oscilloscope cameras  
[NASA-CASE-LAR-10319-1] c 14 N73-32322

Reeling system  
[NASA-CASE-LAR-10129-2] c 37 N74-20063

Sprag solenoid brake --- development and operations of electrically controlled brake  
[NASA-CASE-MFS-21846-1] c 37 N74-26976

Solid medium thermal engine  
[NASA-CASE-ARC-10461-1] c 44 N74-33379

Automatic inoculating apparatus --- includes movable carriage, drive motor, and swabbing motor  
[NASA-CASE-LAR-11074-1] c 51 N75-13502

Clock setter  
[NASA-CASE-LAR-11458-1] c 35 N76-16392

Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c 37 N76-21554

Reel safety brake  
[NASA-CASE-GSC-11960-1] c 37 N77-14479

Mechanical sequencer  
[NASA-CASE-MSC-19536-1] c 37 N77-22482

Combined docking and grasping device  
[NASA-CASE-MFS-23088-1] c 37 N77-23483

Wrist joint assembly  
[NASA-CASE-MFS-23311-1] c 54 N78-17676

Tetherline system for orbiting satellites  
[NASA-CASE-MFS-23564-1] c 15 N78-25119

Actuator mechanism  
[NASA-CASE-GSC-11883-2] c 37 N78-31426

Quartz ball valve  
[NASA-CASE-NPO-14473-1] c 37 N80-23654

Method and apparatus for holding two separate metal pieces together for welding  
[NASA-CASE-GSC-12318-1] c 37 N80-23655

Heat treat fixture and method of heat treating  
[NASA-CASE-LAR-11821-1] c 26 N80-28492

Fire extinguishing apparatus having a slidable mass for a penetrator nozzle --- for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137

Device for coupling a first vehicle to a second vehicle  
[NASA-CASE-GSC-12429-1] c 37 N81-14320

Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MSC-18791-1] c 37 N81-24446

Compression test fixture  
[NASA-CASE-MSC-18723-1] c 39 N81-24470

Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-2] c 52 N81-25661

Clamp-mount device  
[NASA-CASE-MFS-25510-1] c 37 N82-11470

Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716

Reusable captive blind fastener  
[NASA-CASE-MSC-18742-1] c 37 N82-26673

Self-locking mechanical center joint --- for space construction  
[NASA-CASE-LAR-12864-1] c 37 N82-29606

Mechanical end joint system for structural column elements  
[NASA-CASE-LAR-12482-1] c 37 N82-32732

**MECHANICAL DRIVES**

Hydraulic drive mechanism Patent  
[NASA-CASE-XMS-03252] c 15 N71-10658

Anti-backlash circuit for hydraulic drive system Patent  
[NASA-CASE-XNP-01020] c 03 N71-12260

Precision stepping drive Patent  
[NASA-CASE-MFS-14772] c 15 N71-17692

Incremental motion drive system Patent  
[NASA-CASE-XNP-08897] c 15 N71-17694

Ratchet mechanism Patent  
[NASA-CASE-MFS-12805] c 15 N71-17805

Welding skate with computerized control Patent  
[NASA-CASE-XMF-07069] c 15 N71-23815

Reversible motion drive system Patent  
[NASA-CASE-NPO-10173] c 15 N71-24696

Synchronous dc direct drive system Patent  
[NASA-CASE-GSC-10065-1] c 10 N71-27136

Energy absorption device Patent  
[NASA-CASE-XNP-01848] c 15 N71-28959

Boring bar drive mechanism Patent  
[NASA-CASE-XLA-03661] c 15 N71-33518

Rotary actuator  
[NASA-CASE-NPO-10244] c 15 N72-26371

Rotary actuator  
[NASA-CASE-NPO-10680] c 31 N73-14855

Optically actuated two position mechanical mover  
[NASA-CASE-NPO-13105-1] c 37 N74-21060

Two speed drive system --- mechanical device for changing speed on rotating vehicle wheel  
[NASA-CASE-MFS-20645-1] c 37 N74-23070

Concentric differential gearing arrangement  
[NASA-CASE-ARC-10462-1] c 37 N74-27901

Geneva mechanism --- including star wheel and driver  
[NASA-CASE-NPO-13281-1] c 37 N75-13266

Mechanical thermal motor  
[NASA-CASE-MFS-23062-1] c 37 N77-12402

Mount for continuously orienting a collector dish in a system adapted to perform both diurnal and seasonal solar tracking  
[NASA-CASE-MFS-23267-1] c 35 N77-20401

Hydraulic drain means for servo-systems  
[NASA-CASE-NPO-10316-1] c 37 N77-22479

Mechanical sequencer  
[NASA-CASE-MSC-19536-1] c 37 N77-22482

Gas turbine engine with convertible accessories  
[NASA-CASE-LEW-12390-1] c 07 N78-17056

Wobble gear drive mechanism --- for aerospace environments  
[NASA-CASE-WOO-00625] c 37 N78-17385

Toggle mechanism for pinching metal tubes  
[NASA-CASE-GSC-12274-1] c 37 N79-28550

Antenna deployment mechanism for use with a spacecraft --- extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183

Redundant motor drive system  
[NASA-CASE-MFS-23777-1] c 37 N80-32716

Belt for transmitting power from a cogged driving member to a cogged driven member  
[NASA-CASE-GSC-12289-1] c 37 N80-32717

Base drive for paralleled inverter systems  
[NASA-CASE-NPO-14163-1] c 33 N81-14220

Speed control device for a heavy duty shaft --- solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15364



- Variable speed drive  
[NASA-CASE-GSC-12643-1] c 37 N81-24447  
Clutchless multiple drive source for output shaft  
[NASA-CASE-ARC-11325-1] c 37 N82-22496

**MECHANICAL ENGINEERING**

- Manual actuator — for spacecraft exercising machines  
[NASA-CASE-MFS-21481-1] c 37 N74-18127  
Shaft seal assembly for high speed and high pressure applications

- [NASA-CASE-LEW-11873-1] c 37 N79-22475

**MECHANICAL MEASUREMENT**

- Strain gage Patent Application  
[NASA-CASE-FRC-10053] c 14 N70-35587  
Apparatus for absorbing and measuring power Patent  
[NASA-CASE-XLE-00720] c 14 N70-40201  
Strain sensor for high temperatures Patent  
[NASA-CASE-XNP-09205] c 14 N71-17657

- Extensometer Patent  
[NASA-CASE-XMF-04680] c 15 N71-19489

- Hall effect transducer  
[NASA-CASE-LAR-10620-1] c 09 N72-25255

- Strain gage mounting assembly  
[NASA-CASE-NPO-13170-1] c 35 N76-14430

- Pulsed phase locked loop strain monitor  
[NASA-CASE-LAR-12772-1] c 33 N81-15195

- Photomechanical transducer  
[NASA-CASE-NPO-14363-1] c 39 N81-25400

- Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

**MECHANICAL PROPERTIES**

- High temperature testing apparatus Patent  
[NASA-CASE-XLE-00335] c 14 N70-35368

- Fixture for environmental exposure of structural materials under compression  
[NASA-CASE-LAR-12602-1] c 35 N81-19429

**MECHANICS (PHYSICS)**

- Gravity stabilized flying vehicle Patent  
[NASA-CASE-MS-C-12111-1] c 02 N71-11039

**MECHANIZATION**

- Machine for use in monitoring fatigue life for a plurality of elastomeric specimens  
[NASA-CASE-NPO-13731-1] c 39 N78-10493

**MEDICAL ELECTRONICS**

- Circuit for detecting initial systole and diastolic notch — for monitoring arterial pressure  
[NASA-CASE-LEW-11581-1] c 54 N75-13531

- Pocket ECG electrode  
[NASA-CASE-ARC-11258-1] c 52 N80-33081

- Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612

**MEDICAL EQUIPMENT**

- Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189

- Method and system for respiration analysis Patent  
[NASA-CASE-XFR-08403] c 05 N71-11202

- Laser machining apparatus Patent  
[NASA-CASE-HQN-10541-2] c 15 N71-27135

- Telemetry actuated switch  
[NASA-CASE-ARC-10105] c 09 N72-17153

- Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MFS-21010-1] c 05 N73-30078

- Automatic instrument for chemical processing to detect microorganism in biological samples by measuring light reactions  
[NASA-CASE-GSC-11169-2] c 05 N73-32011

- Servo-controlled intravitral microscope system  
[NASA-CASE-NPO-13214-1] c 35 N75-25123

- Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c 54 N75-27761

- Medical subject monitoring systems — multichannel monitoring systems  
[NASA-CASE-MS-C-14180-1] c 52 N76-14757

- Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-1] c 54 N76-22914

- Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525

- Corneal seal device  
[NASA-CASE-LEW-12258-1] c 52 N77-28716

- Snap-in compressible biomedical electrode  
[NASA-CASE-MS-C-14623-1] c 52 N77-28717

- Tissue macerating instrument  
[NASA-CASE-LEW-12668-1] c 52 N78-14773

- Flow compensating pressure regulator  
[NASA-CASE-LEW-12718-1] c 34 N78-25351

- Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12723-1] c 52 N80-18690

- Micro-fluid exchange coupling apparatus  
[NASA-CASE-ARC-11114-1] c 51 N81-14605

- Urine collection device  
[NASA-CASE-MS-C-16433-1] c 52 N81-24711

- Spine immobilization apparatus  
[NASA-CASE-ARC-11167-1] c 52 N81-25662

- System for moving a probe to follow movements of tissue  
[NASA-CASE-NPO-15197-1] c 52 N81-26697

- Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N81-27786

- Low X-ray absorption aneurysm clips  
[NASA-CASE-LAR-12650-1] c 52 N81-29768

- Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

- Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862

**MELTING**

- Hot melt recharge system  
[NASA-CASE-LAR-12881-1] c 27 N82-26464

**MELTING POINTS**

- Mixed diamines for lower melting addition polyimide preparation and utilization  
[NASA-CASE-LAR-12054-1] c 27 N79-33316

- Low thrust monopropellant engine  
[NASA-CASE-GSC-12194-2] c 20 N82-18314

**MELTS (CRYSTAL GROWTH)**

- Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 76 N79-23798

- Preparation of monotectic alloys having a controlled microstructure by directional solidification under dopant-induced interface breakdown  
[NASA-CASE-MFS-23816-1] c 26 N80-23419

- Means for growing ribbon crystals without subjecting the crystals to thermal shock-induced strains  
[NASA-CASE-NPO-14298-1] c 76 N80-32244

- Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389

- Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N81-19944

- Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 76 N81-30012

- Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N82-30105

**MEMBRANE STRUCTURES**

- Liquid junction and method of fabricating the same Patent Application  
[NASA-CASE-NPO-10682] c 15 N70-34699

- Measuring device Patent  
[NASA-CASE-XMS-01546] c 14 N70-40233

- Flexible composite membrane Patent  
[NASA-CASE-XNP-08837] c 18 N71-16210

- Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747

- Meteoroid capture cell construction  
[NASA-CASE-MS-C-12423-1] c 91 N76-30131

- Strong thin membrane structure — solar sails  
[NASA-CASE-NPO-14021-2] c 27 N80-16163

- In-situ cross linking of polyvinyl alcohol — application to battery separator films  
[NASA-CASE-LEW-13135-2] c 27 N81-24257

- Separator for alkaline batteries and method of making same  
[NASA-CASE-GSC-10350-1] c 44 N82-24642

- Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644

**MEMBRANES**

- Apparatus for measuring swelling characteristics of membranes  
[NASA-CASE-XGS-03865] c 14 N69-21363

- Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c 18 N71-20742

- Ionene membrane separator  
[NASA-CASE-NPO-11091] c 18 N72-22567

- Dual membrane hollow fiber fuel cell and method of operating same  
[NASA-CASE-NPO-13732-1] c 44 N79-10513

- Microelectrophoretic apparatus and process  
[NASA-CASE-ARC-11121-1] c 25 N79-14169

- Dialysis system — using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687

- Method of forming dynamic membrane on stainless steel support  
[NASA-CASE-MS-C-18172-1] c 26 N80-19237

- Reverse osmosis membrane of high urea rejection properties — water purification  
[NASA-CASE-ARC-10980-1] c 27 N80-23452

- Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076

- Asymmetric polyimide separation membrane and method  
[NASA-CASE-NPO-15431-1] c 25 N81-29178

- Air removal device — life support systems  
[NASA-CASE-XLA-8914-2] c 25 N82-21269

- Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641

- Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 27 N82-28444

- Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370

**MEMORY**

- Method for making conductors for ferrite memory arrays — from pre-formed metal conductors  
[NASA-CASE-LAR-10994-1] c 24 N75-13032

**MERCURY (METAL)**

- Mercury capillary interrupter Patent  
[NASA-CASE-XNP-02251] c 12 N71-20896

- Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312

- Feed system for an ion thruster  
[NASA-CASE-NPO-10737] c 28 N72-11709

**MERCURY VAPOR**

- Mercury capillary interrupter Patent  
[NASA-CASE-XNP-02251] c 12 N71-20896

- Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294

**METABOLIC WASTES**

- Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721

- Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MS-C-16777-1] c 51 N80-27067

**METABOLISM**

- Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c 25 N75-12086

- Process for control of cell division  
[NASA-CASE-LAR-10773-3] c 51 N77-25769

- Metabolic rate meter and method  
[NASA-CASE-MS-C-12239-1] c 52 N79-21750

**METAL BONDING**

- Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786

- Method of making a diffusion bonded refractory coating  
[NASA-CASE-XLE-01604-2] c 15 N71-15610

- Metal valve pin with encapsulated elastomeric body  
[NASA-CASE-MS-C-12116-1] c 15 N71-17648

- Apparatus for the determination of the existence or non-existence of a bonding between two members  
[NASA-CASE-XNP-03459] c 15 N71-21078

- Bonded elastomeric seal for electrochemical cells  
[NASA-CASE-XGS-02631] c 03 N71-23006

- Silicon solar cell with cover glass bonded to cell by metal pattern  
[NASA-CASE-XLE-08569] c 03 N71-23449

- Positive contact resistance soldering unit  
[NASA-CASE-KSC-10242] c 15 N72-23497

- Bonding or repairing process  
[NASA-CASE-MS-C-12357] c 15 N73-12489

- Totally confined explosive welding — apparatus to reduce noise level and protect personnel during explosive bonding  
[NASA-CASE-LAR-10941-1] c 37 N74-21057

- Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c 37 N75-25185

- Bimetallic junctions  
[NASA-CASE-LEW-11573-1] c 26 N77-28265

- Heat exchanger and method of making — bonding rocket chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N79-13289

- Totally confined explosive welding  
[NASA-CASE-LAR-10941-2] c 37 N79-13364

- Method and apparatus for holding two separate metal pieces together for welding  
[NASA-CASE-GSC-12318-1] c 37 N80-23655

- Heat exchanger and method of making — rocket lining  
[NASA-CASE-LEW-12441-2] c 34 N80-24573

- Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-13359-1] c 27 N81-24265

- Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206



## METAL COATINGS

- Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443
- Soldering with solder flux which leaves corrosion resistant coating Patent  
[NASA-CASE-XNP-03459] c 15 N71-21078
- Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047
- Trialkyl-dihalotantalum and niobium compounds Patent  
[NASA-CASE-XNP-04023] c 06 N71-28808
- Silicide coatings for refractory metals Patent  
[NASA-CASE-XLE-10910] c 18 N71-29040
- Selective nickel deposition  
[NASA-CASE-LEW-10965-1] c 15 N72-25452
- Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c 09 N73-27150
- Panel for selectively absorbing solar thermal energy and the method of producing said panel  
[NASA-CASE-MFS-22562-1] c 44 N76-14595
- Ultraviolet light reflective coating  
[NASA-CASE-GSC-11786-1] c 24 N76-24363
- Metallic hot wire anemometer — for high speed wind tunnel tests  
[NASA-CASE-ARC-10911-1] c 35 N77-20400
- Solar cell collector  
[NASA-CASE-LEW-12552-1] c 44 N78-25527
- Electromagnetic radiation energy arrangement — coatings for solar energy absorption and infrared reflection  
[NASA-CASE-WOO-00428-1] c 32 N79-19186
- Method and apparatus for coating substrates using lasers  
[NASA-CASE-LEW-13526-1] c 26 N82-22347
- Light weight nickel battery plaque  
[NASA-CASE-LEW-13349-1] c 44 N82-22673
- Improved thermal barrier coating system  
[NASA-CASE-LEW-13324-1] c 26 N82-26431
- Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N82-26575
- METAL CUTTING**
- Metal shearing energy absorber  
[NASA-CASE-HQN-10638-1] c 15 N73-30460
- Vee-notching device — with adjustable carriage  
[NASA-CASE-MFS-20730-1] c 39 N74-13131
- Hole cutter — drill bits and rotating shaft  
[NASA-CASE-MFS-22649-1] c 37 N75-25186
- Method and tool for machining a transverse slot about a bore  
[NASA-CASE-LAR-11855-1] c 37 N81-14319
- METAL FATIGUE**
- Method for alleviating thermal stress damage in laminates  
[NASA-CASE-LEW-12493-2] c 24 N81-26179
- METAL FIBERS**
- Lightweight electrically-powered flexible thermal laminate — made of metal and nonconductive yarns  
[NASA-CASE-MSC-12662-1] c 33 N79-12331
- METAL FILMS**
- Means and methods of depositing thin films on substrates Patent  
[NASA-CASE-XNP-00595] c 15 N70-34967
- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-01765] c 18 N71-10772
- Bismuth-lead coatings for gas bearings used in atmospheric environments and vacuum chambers Patent  
[NASA-CASE-XGS-02011] c 15 N71-20739
- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-10337] c 15 N71-24046
- Magnetic recording head and method of making same Patent  
[NASA-CASE-GSC-10097-1] c 08 N71-27210
- Light regulator  
[NASA-CASE-LAR-10836-1] c 26 N72-27784
- Deposition of alloy films — on irregularly shaped metal object  
[NASA-CASE-LEW-11262-1] c 27 N74-13270
- Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c 37 N75-19684
- Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436
- Thin film strain transducer — for strain monitoring of high altitude balloons  
[NASA-CASE-WLP-10055-1] c 35 N82-26632
- METAL FINISHING**
- Selective plating of etched circuits without removing previous plating Patent  
[NASA-CASE-XGS-03120] c 15 N71-24047
- Surface finishing — for aircraft wings  
[NASA-CASE-MSC-12631-1] c 24 N77-28225
- METAL FOILS**
- Folding apparatus Patent  
[NASA-CASE-XLA-00137] c 15 N70-33180
- Thermal control of space vehicles Patent  
[NASA-CASE-XLA-01291] c 33 N70-36617

- Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145
- Method of making porous conductive supports for electrodes — by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692
- Method and apparatus for tensile testing of metal foil  
[NASA-CASE-LAR-10208-1] c 35 N76-18400
- Process for preparing high temperature polyimide film laminates  
[NASA-CASE-LAR-12742-1] c 24 N81-12174
- Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470
- METAL FUELS**
- Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209
- METAL HALIDES**
- Process for making anhydrous metal halides  
[NASA-CASE-LEW-11860-1] c 37 N76-18458
- Direct current ballast circuit for metal halide lamp  
[NASA-CASE-MSC-18407-1] c 33 N82-24427
- High power metallic halide laser — amplifying a copper chloride laser  
[NASA-CASE-NPO-14782-1] c 36 N82-28616
- METAL HYDRIDES**
- Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436
- METAL IONS**
- Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363
- Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206
- METAL JOINTS**
- Cryogenic connector for vacuum use Patent  
[NASA-CASE-XGS-02441] c 15 N70-41629
- METAL MATRIX COMPOSITES**
- Reinforced metallic composites Patent  
[NASA-CASE-XLE-02428] c 17 N70-33288
- Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142
- Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984
- Refractory metal base alloy composites  
[NASA-CASE-XLE-03940-2] c 17 N72-28536
- Method of preparing graphite reinforced aluminum composite  
[NASA-CASE-MFS-21077-1] c 24 N75-28135
- Method of making reinforced composite structure  
[NASA-CASE-LEW-12619-1] c 24 N77-19171
- Heat exchanger and method of making — bonding rocket chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N79-13289
- Preparation of monotectic alloys having a controlled microstructure by directional solidification under dopant-induced interface breakdown  
[NASA-CASE-MFS-23816-1] c 26 N80-23419
- Heat exchanger and method of making — rocket lining  
[NASA-CASE-LEW-12441-2] c 34 N80-24573
- Method for alleviating thermal stress damage in laminates — metal matrix composites  
[NASA-CASE-LEW-12493-1] c 24 N81-17170
- Method for alleviating thermal stress damage in laminates  
[NASA-CASE-LEW-12493-2] c 24 N81-26179
- Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384
- Method and apparatus for strengthening boron fibers — high temperature oxidation  
[NASA-CASE-LEW-13826-1] c 24 N82-26385
- METAL OXIDE SEMICONDUCTORS**
- Gyrator employing field effect transistors  
[NASA-CASE-MFS-21433] c 09 N73-20232
- Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c 76 N74-20329
- Integrated P-channel MOS gyrator  
[NASA-CASE-MFS-22343-1] c 33 N74-34638
- Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c 76 N75-25730
- Solar cell collector  
[NASA-CASE-LEW-12552-1] c 44 N78-25527
- Multilevel metallization method for fabricating a metal oxide semiconductor device  
[NASA-CASE-MFS-23541-1] c 76 N79-14906
- Method of making V-MOS field effect transistors utilizing a two-step anisotropic etching and ion implantation  
[NASA-CASE-GSC-12515-1] c 33 N81-26360
- Schottky barrier solar cell  
[NASA-CASE-NPO-13689-2] c 44 N81-29525
- High voltage V-groove solar cell  
[NASA-CASE-LEW-13401-2] c 44 N82-24717

## METAL OXIDES

- Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142
- Photoetching of metal-oxide layers  
[NASA-CASE-ERC-10108] c 06 N72-21094
- Production of metal powders  
[NASA-CASE-XLE-06481] c 17 N72-22530
- Method for obtaining oxygen from lunar or similar soil  
[NASA-CASE-MSC-12408-1] c 46 N74-13011
- Method of forming dynamic membrane on stainless steel support  
[NASA-CASE-MSC-18172-1] c 26 N80-19237
- Method of forming oxide coatings  
[NASA-CASE-LEW-13132-1] c 44 N81-27616
- METAL PARTICLES**
- Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983
- Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729
- Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209
- METAL PLATES**
- Detector panels-micrometeoroid impact Patent  
[NASA-CASE-XLA-05906] c 31 N71-16221
- Nuclear fuel elements  
[NASA-CASE-XLE-00209] c 22 N73-32528
- Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264
- Heat treat fixture and method of heat treating  
[NASA-CASE-LAR-11821-1] c 26 N80-28492
- METAL POWDER**
- Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468
- Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022
- Shock tube powder dispersing apparatus Patent  
[NASA-CASE-XLE-04946] c 17 N71-24911
- Preparation of high purity copper fluoride  
[NASA-CASE-LEW-10794-1] c 06 N72-17093
- Production of metal powders  
[NASA-CASE-XLE-06461] c 17 N72-22530
- Apparatus for producing metal powders  
[NASA-CASE-XLE-06461-2] c 17 N72-28535
- Peen plating  
[NASA-CASE-GSC-11163-1] c 15 N73-32360
- Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N82-26575
- METAL SHEETS**
- Light shield and infrared reflector for fatigue testing Patent  
[NASA-CASE-XLA-01782] c 14 N71-26138
- Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c 37 N74-11301
- Method of making an explosively welded scarf joint  
[NASA-CASE-LAR-11211-1] c 37 N75-12326
- Process for making sheets with parallel pores of uniform size  
[NASA-CASE-GSC-10984-1] c 37 N75-26371
- Apparatus for welding sheet material — butt joints  
[NASA-CASE-XMS-01330] c 37 N75-27376
- Method of bonding plasticized elastomer to metal and articles produced thereby  
[NASA-CASE-MFS-25181-1] c 27 N82-24340
- METAL SPINNING**
- Spin forming tubular elbows Patent  
[NASA-CASE-XMF-01083] c 15 N71-22723
- METAL STRIPS**
- Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411
- Interconnection of solar cells Patent  
[NASA-CASE-XGS-01475] c 03 N71-11058
- Method of making tubes Patent  
[NASA-CASE-XGS-04175] c 15 N71-18579
- High speed shutter — electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c 70 N74-21300
- METAL SURFACES**
- Condenser - Separator  
[NASA-CASE-XLA-08645] c 15 N69-21465
- Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830
- Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875
- Process for reducing secondary electron emission Patent  
[NASA-CASE-XNP-09469] c 24 N71-25555
- Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312
- Temperature reducing coating for metals subject to flame exposure Patent  
[NASA-CASE-XLE-00035] c 33 N71-29151



Thin film gauge --- for measuring convective heat transfer rates along test surfaces in wind tunnels  
[NASA-CASE-NPO-10617-1] c 35 N74-22095

Surface finishing  
[NASA-CASE-MSC-12631-3] c 27 N81-14077

Improved refractory coatings --- sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209

Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455

Corrosion resistant thermal barrier coating --- protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188

Overlay metallic-cermet alloy coating systems --- for gas turbine engines  
[NASA-CASE-LEW-13639-1] c 27 N82-33522

**METAL VAPOR LASERS**  
High power metallic halide laser --- amplifying a copper chloride laser  
[NASA-CASE-NPO-14782-1] c 36 N82-28616

**METAL VAPORS**  
Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983

Apparatus for making a metal slurry product Patent  
[NASA-CASE-XLE-00010] c 15 N70-33382

Inert gas metallic vapor laser  
[NASA-CASE-NPO-13449-1] c 36 N75-32441

Isotope separation using metallic vapor lasers  
[NASA-CASE-NPO-13550-1] c 36 N77-26477

**METAL WORKING**  
Electric arc welding Patent  
[NASA-CASE-XMF-00392] c 15 N70-34814

Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114] c 15 N71-17650

Protective device for machine and metalworking tools Patent  
[NASA-CASE-XLE-01092] c 15 N71-22797

Portable milling tool Patent  
[NASA-CASE-XMF-03511] c 15 N71-22799

Extrusion die for refractory metals Patent  
[NASA-CASE-XLE-06773] c 15 N71-23817

Magnetomotive metal working device Patent  
[NASA-CASE-XMF-03793] c 15 N71-24833

Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-3] c 15 N71-24865

Insert facing tool --- manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MFS-21485-1] c 37 N74-25968

Apparatus for forming dished ion thruster gnds  
[NASA-CASE-LEW-11694-2] c 37 N76-14461

Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12619-1] c 37 N81-16470

**METAL-METAL BONDING**  
Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443

Honeycomb panel and method of making same Patent  
[NASA-CASE-XMF-01402] c 18 N71-21651

Capillary flow weld-bonding  
[NASA-CASE-LAR-11726-1] c 37 N76-27568

Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455

**METALLIC GLASSES**  
Glass compositions with a high modulus of elasticity --- nontoxic glass fibers  
[NASA-CASE-HQN-10274-1] c 27 N82-29451

High modulus invert analog glass compositions containing beryllia  
[NASA-CASE-HQN-10931-2] c 27 N82-29452

**METALLIZING**  
Multilevel metallization method for fabricating a metal oxide semiconductor device  
[NASA-CASE-MFS-23541-1] c 76 N79-14906

**METALLOGRAPHY**  
Method for etching copper Patent  
[NASA-CASE-XGS-08306] c 17 N71-16044

**METALLOSILOXANE POLYMER**  
Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c 37 N74-21058

**METALLURGY**  
Induction furnace with perforated tungsten foil shielding Patent  
[NASA-CASE-XLE-04026] c 14 N71-23267

Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229

**METALS**  
Transpiration cooled turbine blade manufactured from wires Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226

Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710

Convoluting device for forming convolutions and the like Patent  
[NASA-CASE-XNP-05297] c 15 N71-23811

Forming tool for ribbon or wire  
[NASA-CASE-XLA-05966] c 15 N72-12408

Peen plating  
[NASA-CASE-GSC-11163-1] c 15 N73-32360

Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063

Scanning nozzle plating system --- for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c 31 N74-23065

Production of pure metals  
[NASA-CASE-LEW-10906-1] c 25 N74-30502

Thermocouple tape --- developed from thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c 35 N76-15434

Method of forming shrink-fit compression seal  
[NASA-CASE-LAR-11563-1] c 37 N77-23482

Solar cells having integral collector gnds  
[NASA-CASE-LEW-12819-1] c 44 N79-11467

Method and apparatus for producing concentric hollow spheres --- for nuclear fusion by inertial confinement  
[NASA-CASE-NPO-14596-2] c 31 N82-25401

**METASTABLE STATE**  
Stabilization of He2(a 3 Sigma u+) molecules in liquid helium by optical pumping for vacuum UV laser 6  
[NASA-CASE-NPO-13993-1] c 72 N79-13826

**METEORITE COLLISIONS**  
Pressurized panel  
[NASA-CASE-XLA-08916-2] c 14 N73-28487

Method of and device for determining the characteristics and flux distribution of micrometeorites --- scanning puncture holes in sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c 91 N74-13130

**METEORITES**  
Method of making pressurized panel Patent  
[NASA-CASE-XLA-08916] c 15 N71-29018

**METEORITIC DAMAGE**  
Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent  
[NASA-CASE-XLE-01246] c 14 N71-10797

**METEOROID HAZARDS**  
Meteoroid impact position locator aid for manned space station  
[NASA-CASE-LAR-10629-1] c 35 N75-33367

**METEOROID PROTECTION**  
Aerodynamic protection for space flight vehicles Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679

**METEOROLIDS**  
Apparatus for photographing meteors  
[NASA-CASE-LAR-10226-1] c 14 N73-19419

Meteoroid capture cell construction  
[NASA-CASE-MSC-12423-1] c 91 N76-30131

**METEOROLOGICAL BALLOONS**  
Meteorological balloon Patent  
[NASA-CASE-XMF-04163] c 02 N71-23007

**METHANE**  
Gas lubricant compositions Patent  
[NASA-CASE-XLE-00353] c 18 N70-39897

**METHYL ALCOHOLS**  
Supercritical multicomponent solvent coal extraction  
[NASA-CASE-NPO-15767-1] c 28 N82-12241

**MICHELSON INTERFEROMETERS**  
Interferometer direction sensor Patent  
[NASA-CASE-NPO-10320] c 14 N71-17655

Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c 14 N71-17662

Multispectral imaging system  
[NASA-CASE-MSC-12404-1] c 23 N73-13661

Interferometer mirror tilt correcting system  
[NASA-CASE-NPO-13687-1] c 35 N78-18391

**MICROANALYSIS**  
Plural output optometric sample cell and analysis system  
[NASA-CASE-NPO-10233-1] c 74 N78-33913

**MICROBALANCES**  
Null-type vacuum microbalance Patent  
[NASA-CASE-XAC-00472] c 15 N70-40180

Microbalance --- for measuring particle mass  
[NASA-CASE-MSC-11242] c 35 N78-17358

**MICROBALLOONS**  
Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

**MICROBIOLOGY**  
Variable angle tube holder  
[NASA-CASE-LAR-10507-1] c 11 N72-25284

Apparatus for microbiological sampling --- including automatic swabbing  
[NASA-CASE-LAR-11069-1] c 35 N75-12272

Automatic inoculating apparatus --- includes movable carriage, drive motor, and swabbing motor  
[NASA-CASE-LAR-11074-1] c 51 N75-13502

Automatic microbial transfer device  
[NASA-CASE-LAR-11354-1] c 35 N75-27330

Application of luciferase assay for ATP to antimicrobial drug susceptibility  
[NASA-CASE-GSC-12039-1] c 51 N77-22794

Electrochemical detection device --- for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073

Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698

**MICROCHANNELS**  
Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659

**MICROCRACKS**  
System for detecting substructure microfractures and method therefore  
[NASA-CASE-NPO-14192-1] c 39 N80-10507

Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 27 N81-22190

**MICROELECTRONICS**  
Apparatus and method for separating a semiconductor wafer Patent  
[NASA-CASE-ERC-10138] c 26 N71-14354

Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234

Microelectronic module package Patent  
[NASA-CASE-XMS-02182] c 10 N71-28783

Method of coating through-holes Patent  
[NASA-CASE-XMF-05999] c 15 N71-29032

Microcircuit negative cutter  
[NASA-CASE-XLA-09843] c 15 N72-27485

Screened circuit capacitors  
[NASA-CASE-LAR-10294-1] c 26 N72-28762

Active tuned circuit  
[NASA-CASE-GSC-11340-1] c 10 N72-33230

Automatic visual inspection system for microelectronics  
[NASA-CASE-NPO-13282] c 38 N78-17396

Inductorless narrow-band filter/amplifier  
[NASA-CASE-GSC-12410-1] c 33 N79-24260

Method and apparatus for fabricating improved solar cell modules  
[NASA-CASE-NPO-14416-1] c 44 N81-14389

Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709

Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-15670-1] c 33 N82-33634

**MICROFIBERS**  
Small conductive particle sensor --- microfiber size determination  
[NASA-CASE-LAR-12552-1] c 35 N82-11431

**MICROFILMS**  
Apparatus for inspecting microfilm Patent  
[NASA-CASE-MFS-20240] c 14 N71-26788

**MICROINSTRUMENTATION**  
Apparatus for handling micron size range particulate material  
[NASA-CASE-NPO-10151] c 37 N78-17386

**MICROMETEORITES**  
Method of and device for determining the characteristics and flux distribution of micrometeorites --- scanning puncture holes in sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c 91 N74-13130

Micrometeoroid velocity and trajectory analyzer  
[NASA-CASE-GSC-11892-1] c 35 N76-15433

**MICROMETEOROLIDS**  
Micrometeoroid velocity measuring device Patent  
[NASA-CASE-XLA-00495] c 14 N70-41332

Force transducer Patent  
[NASA-CASE-XAC-01101] c 14 N70-41957

Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996

Detector panels-micrometeoroid impact Patent  
[NASA-CASE-XLA-05906] c 31 N71-16221

Rotary bead dropper and selector for testing micrometeorite detectors Patent  
[NASA-CASE-XGS-03304] c 09 N71-22988

Micrometeoroid penetration measuring device Patent  
[NASA-CASE-XLA-00941] c 14 N71-23240

Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MSC-12109] c 18 N71-26285

Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477

Meteoroid detector  
[NASA-CASE-LAR-10483-1] c 14 N73-32327

Deployable pressurized cell structure for a micrometeoroid detector  
[NASA-CASE-LAR-10295-1] c 35 N74-21062

Semiconductor projectile impact detector  
[NASA-CASE-MFS-23008-1] c 35 N78-18390

**MICROMETERS**  
Apparatus for handling micron size range particulate material  
[NASA-CASE-NPO-10151] c 37 N78-17386



**MICROMINIATURIZATION**

Compensating radiometer  
[NASA-CASE-XLA-04556] c 14 N69-27484

**MICROORGANISMS**

Bacteriostatic conformal coating and methods of application Patent  
[NASA-CASE-GSC-10007] c 18 N71-16046

Vacuum probe surface sampler  
[NASA-CASE-LAR-10623-1] c 14 N73-30395

Measurement of gas production of microorganisms — using pressure sensors  
[NASA-CASE-LAR-11326-1] c 35 N75-33368

Biocontamination and particulate detection system  
[NASA-CASE-NPO-13953-1] c 35 N79-28527

Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698

Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10-1] c 25 N82-25335

Apparatus and process for microbial detection and enumeration  
[NASA-CASE-LAR-12709-1] c 35 N82-28604

**MICROPARTICLES**

Micropacked column for a chromatographic system  
[NASA-CASE-XNP-04816] c 06 N69-39936

Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 34 N82-24448

**MICROPHONES**

Audio signal processor Patent  
[NASA-CASE-MSC-12223-1] c 07 N71-26181

Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234

Wind tunnel microphone structure Patent  
[NASA-CASE-XNP-00250] c 11 N71-28779

High-temperature microphone system — for measuring pressure fluctuations in gases at high temperature  
[NASA-CASE-LAR-12375-1] c 32 N79-24203

Adapter for mounting microphone flush with the external surface of the skin of a pressurized aircraft  
[NASA-CASE-FRC-11072-1] c 35 N82-24474

**MICROPROCESSORS**

Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411

Automatic multi-banking of memory for microprocessors  
[NASA-CASE-NPO-15295-1] c 60 N82-11785

**MICROSCOPES**

Absolute focus lock for microscopes  
[NASA-CASE-LAR-10184] c 14 N72-22445

Hand-held photomicroscope  
[NASA-CASE-ARC-10468-1] c 14 N73-33361

**MICROSTRIP TRANSMISSION LINES**

Thin conformal antenna array for microwave power conversions  
[NASA-CASE-NPO-13886-1] c 32 N78-24391

Multiple band circularly polarized microstrip antenna  
[NASA-CASE-MSC-18334-1] c 32 N80-32604

Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336

**MICROSTRUCTURE**

Method of producing refractory composites containing tantalum carbide, hafnium carbide, and hafnium boride Patent  
[NASA-CASE-XLE-03940] c 18 N71-26153

Refractory metal base alloy composites  
[NASA-CASE-XLE-03940-2] c 17 N72-28536

Diffusion welding — heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c 37 N74-21055

Method of determining bond quality of power transistors attached to substrates — X ray inspection of junction microstructure  
[NASA-CASE-MFS-21931-1] c 37 N75-26372

Preparation of monotectic alloys having a controlled microstructure by directional solidification under dopant-induced interface breakdown  
[NASA-CASE-MFS-23816-1] c 26 N80-23419

**MICROTHRUST**

Annular slit colloid thruster Patent  
[NASA-CASE-GSC-10709-1] c 28 N71-25213

Heated porous plug microthruster  
[NASA-CASE-GSC-10640-1] c 28 N72-18766

**MICROWAVE AMPLIFIERS**

Temperature-compensating means for cavity resonator of amplifier Patent  
[NASA-CASE-XNP-00449] c 14 N70-35220

Maser amplifier slow wave structure — detecting weak signals from spacecraft  
[NASA-CASE-NPO-15211-1] c 36 N81-24425

Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N81-24426

**MICROWAVE ANTENNAS**

Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486

Low noise single aperture multimode monopulse antenna feed system Patent  
[NASA-CASE-XNP-01735] c 07 N71-22750

Omnidirectional microwave spacecraft antenna Patent  
[NASA-CASE-XLA-03114] c 09 N71-22888

Validation device for spacecraft checkout equipment Patent  
[NASA-CASE-XKS-10543] c 07 N71-26292

Multi-purpose antenna employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c 07 N72-25174

Omnidirectional slot antenna for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c 09 N72-25247

Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130

Thin conformal antenna array for microwave power conversions  
[NASA-CASE-NPO-13886-1] c 32 N78-24391

Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336

**MICROWAVE CIRCUITS**

Quasi-optical microwave component Patent  
[NASA-CASE-ERC-10011] c 07 N71-29065

Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348

**MICROWAVE COUPLING**

Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c 09 N71-23548

**MICROWAVE EQUIPMENT**

Array phasing device Patent  
[NASA-CASE-ERC-10046] c 10 N71-18722

Broadband microwave waveguide window Patent  
[NASA-CASE-XNP-08880] c 09 N71-24808

Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c 09 N73-12214

Resonant waveguide stark cell — using microwave spectrometers  
[NASA-CASE-LAR-11352-1] c 33 N75-26245

Refrigerated coaxial coupling — for microwave equipment  
[NASA-CASE-NPO-13504-1] c 33 N75-30430

Microwave dichroic plate  
[NASA-CASE-GSC-12171-1] c 33 N79-28416

Unequal split microwave power divider  
[NASA-CASE-LAR-12889-1] c 33 N81-31483

Microwave field effect transistor  
[NASA-CASE-GSC-12442-1] c 33 N82-20398

**MICROWAVE FILTERS**

High power microwave power divider Patent  
[NASA-CASE-NPO-11031] c 07 N71-33606

High-Q bandpass resonators utilizing bandstop resonator pairs  
[NASA-CASE-GSC-10990-1] c 09 N73-26195

**MICROWAVE FREQUENCIES**

Varactor high level mixer  
[NASA-CASE-XGS-02171] c 09 N69-24324

Voltage tunable Gunn-type microwave generator Patent  
[NASA-CASE-XER-07894] c 09 N71-18721

Composite antenna feed  
[NASA-CASE-GSC-11046-1] c 07 N73-28013

**MICROWAVE OSCILLATORS**

Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235

Electron beam controller — using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c 33 N74-10195

**MICROWAVE RADIOMETERS**

Method and means for providing an absolute power measurement capability Patent  
[NASA-CASE-ERC-11020] c 14 N71-26774

Electromagnetic power absorber  
[NASA-CASE-NPO-13830-1] c 32 N80-14281

Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 46 N82-12685

**MICROWAVE REFLECTOMETERS**

Reflectometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c 07 N71-11267

Microwave flaw detector Patent  
[NASA-CASE-ARC-10009-1] c 15 N71-17822

**MICROWAVE RESONANCE**

Dual resonant cavity absorption cell Patent  
[NASA-CASE-LAR-10305] c 14 N71-26137

**MICROWAVE SWITCHING**

Gyrator type circuit Patent  
[NASA-CASE-XAC-10608-1] c 09 N71-12517

Microwave switching power divider — antenna feeds  
[NASA-CASE-GSC-12420-1] c 33 N82-16340

**MICROWAVE TRANSMISSION**

Frequency translating phase conjugation circuit for active retrodirective antenna array — microwave transmission  
[NASA-CASE-NPO-14536-1] c 32 N81-14185

Doppler radar having phase modulation of both transmitted and reflected return signals — ranging  
[NASA-CASE-MSC-18675-1] c 32 N81-29312

Waveguide cooling system  
[NASA-CASE-NPO-15401-1] c 33 N81-29344

**MICROWAVE TUBES**

Electrostatic collector for charged particles  
[NASA-CASE-LEW-11192-1] c 09 N73-13208

**MICROWAVES**

Parametric microwave noise generator Patent  
[NASA-CASE-XER-11019] c 09 N71-23598

Method and apparatus for optical modulating a light signal Patent  
[NASA-CASE-GSC-10216-1] c 23 N71-26722

Waveguide mixer  
[NASA-CASE-ERC-10179] c 07 N72-20141

Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c 44 N74-19870

Wide power range microwave feedback controller  
[NASA-CASE-GSC-12146-1] c 33 N78-32340

Microwave power transmission beam safety system  
[NASA-CASE-NPO-14224-1] c 33 N80-18287

**MIDAIR COLLISIONS**

Apparatus for aiding a pilot in avoiding a midair collision between aircraft  
[NASA-CASE-LAR-10717-1] c 21 N73-30641

**MILLIMETER WAVES**

Millimeter wave antenna system Patent Application  
[NASA-CASE-GSC-10949-1] c 07 N71-28965

Millimeter wave pumped parametric amplifier  
[NASA-CASE-GSC-11617-1] c 33 N74-32660

**MILLING (MACHINING)**

Apparatus for machining geometric cones Patent  
[NASA-CASE-XMS-04292] c 15 N71-22722

Method for milling and drilling glass  
[NASA-CASE-GSC-12636-1] c 37 N80-29705

Method and tool for machining a transverse slot about a bore  
[NASA-CASE-LAR-11855-1] c 37 N81-14319

**MILLING MACHINES**

Electro-optical alignment control system Patent  
[NASA-CASE-XMF-00908] c 14 N70-40238

Portable milling tool Patent  
[NASA-CASE-XMF-03511] c 15 N72-22799

Grinding arrangement for ball nose milling cutters  
[NASA-CASE-LAR-10450-1] c 37 N74-27905

**MINERAL DEPOSITS**

Underground mineral extraction  
[NASA-CASE-NPO-14140-1] c 31 N78-24387

Underground mineral extraction  
[NASA-CASE-NPO-14140-1] c 43 N81-26509

**MINERAL METABOLISM**

Method and system for in vivo measurement of bone tissue using a two level energy source  
[NASA-CASE-MSC-14276-1] c 52 N77-14737

**MINIATURE ELECTRONIC EQUIPMENT**

Miniature stress transducer Patent  
[NASA-CASE-XNP-02983] c 14 N71-21091

Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597

Solid state television camera system Patent  
[NASA-CASE-XMF-06092] c 07 N71-24612

Miniature ingestible telemeter devices to measure deep-body temperature  
[NASA-CASE-ARC-10583-1] c 52 N76-29894

Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648-1] c 35 N77-14407

**MINIATURIZATION**

Miniature vibration isolator Patent  
[NASA-CASE-XLA-01019] c 15 N70-40156

Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897

Miniature carbon dioxide sensor and methods  
[NASA-CASE-MSC-13332-1] c 14 N72-21408

Magnetometer with a miniature transducer and automatic scanning  
[NASA-CASE-LAR-11617-2] c 35 N78-32397

Miniature cyclotron resonance ion source using small permanent magnet  
[NASA-CASE-NPO-14324-1] c 72 N80-27163

**MINING**

Underground mineral extraction  
[NASA-CASE-NPO-14140-1] c 31 N78-24387

Coal-shale interface detection system  
[NASA-CASE-MFS-23720-2] c 43 N80-14423

Coal-shale interface detector  
[NASA-CASE-MFS-23720-1] c 43 N80-23711

Underground mineral extraction  
[NASA-CASE-NPO-14140-1] c 43 N81-26509



## MINORITY CARRIERS

A method of increasing minority carrier lifetime in silicon web or the like — VLSI semiconductor devices and high performance solar cells  
[NASA-CASE-NPO-15530-1] c 76 N82-24993

## MIRRORS

Pneumatic mirror support system  
[NASA-CASE-XLA-03271] c 11 N69-24321  
Electromagnetic mirror drive system  
[NASA-CASE-XLA-03724] c 14 N69-27461  
Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c 14 N71-17662  
Method and apparatus for stabilizing a gaseous optical maser Patent  
[NASA-CASE-XGS-03644] c 16 N71-18614  
Optical mirror apparatus Patent  
[NASA-CASE-ERC-10001] c 23 N71-24868  
Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123  
Optical range finder having nonoverlapping complete images  
[NASA-CASE-MS-12105-1] c 14 N72-21409  
Optical system support apparatus  
[NASA-CASE-XER-07896-2] c 23 N72-22673  
Strain gauge ambiguity sensor for segmented mirror active optical system  
[NASA-CASE-MFS-20506-1] c 35 N75-12273  
Method for manufacturing mirrors in zero gravity environment  
[NASA-CASE-MS-12611-1] c 12 N76-15189  
Method of and means for testing a glancing-incidence mirror system of an X-ray telescope  
[NASA-CASE-MFS-22409-2] c 74 N78-15880  
Interferometer mirror tilt correcting system  
[NASA-CASE-NPO-13687-1] c 35 N78-18391  
Anastigmatic three-mirror telescope  
[NASA-CASE-MFS-23675-1] c 89 N79-10969  
Dual aperture multispectral Schmidt objective  
[NASA-CASE-GSC-12756-1] c 74 N82-30073

## MIS (SEMICONDUCTORS)

Photocapacitive image converter  
[NASA-CASE-LAR-12513-1] c 44 N82-32841

## MISSILE CONTROL

Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c 32 N74-20864

## MISSILE LAUNCHERS

Missile launch release system Patent  
[NASA-CASE-XMF-03198] c 30 N70-40353  
Optical monitor panel Patent  
[NASA-CASE-XKS-03509] c 14 N71-23175  
Controlled release device Patent  
[NASA-CASE-XKS-03338] c 15 N71-24043

## MISSILE STRUCTURES

Missile rolling tail brake torque system — simulating bearing friction on canard controlled missiles  
[NASA-CASE-LAR-12751-1] c 37 N82-26675

## MISSILES

Hypersonic airbreathing missile  
[NASA-CASE-LAR-13264-1] c 15 N78-32168  
Fire protection covering for small diameter missiles  
[NASA-CASE-ARC-11104-1] c 15 N79-26100

## MITOSIS

Process for control of cell division  
[NASA-CASE-LAR-10773-3] c 51 N77-25769

## MIXERS

Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067

## MIXING CIRCUITS

Varactor high level mixer  
[NASA-CASE-XGS-02171] c 09 N69-24324  
Waveguide mixer  
[NASA-CASE-ERC-10179] c 07 N72-20141

## MIXTURES

Low gravity phase separator  
[NASA-CASE-MS-14773-1] c 35 N78-12390

## MOBILITY

Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c 33 N75-27251  
Mobile sampler for use in acquiring samples of terrestrial atmospheric gases  
[NASA-CASE-NPO-15220-1] c 35 N81-24414

## MODE TRANSFORMERS

Transient-compensated SCR inverter  
[NASA-CASE-XLA-08507] c 09 N69-39984  
Dual waveguide mode source having control means for adjusting the relative amplitude of two modes Patent  
[NASA-CASE-XNP-03134] c 07 N71-10676  
Direct current transformer  
[NASA-CASE-MFS-23659-1] c 33 N79-17133

## MODEMS

Charge storage diode modulators and demodulators  
[NASA-CASE-NPO-10189-1] c 33 N77-21314

## MODES (STANDING WAVES)

Acoustic levitation methods and apparatus  
[NASA-CASE-NPO-15562-1] c 71 N82-27086

## MODULATION

Demodulator for carrier transducers  
[NASA-CASE-NUC-10107-1] c 33 N74-17930  
Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381

## MODULATORS

Retrodirective optical system  
[NASA-CASE-XGS-04480] c 16 N69-27491  
Retrodirective modulator Patent  
[NASA-CASE-GSC-10062] c 14 N71-15605  
Laser calibrator Patent  
[NASA-CASE-XLA-03410] c 16 N71-25914  
Full wave modulator-demodulator amplifier apparatus — for generating rectified output signal  
[NASA-CASE-FRC-10072-1] c 33 N74-14939  
Charge storage diode modulators and demodulators  
[NASA-CASE-NPO-10189-1] c 33 N77-21314  
Solar energy modulator  
[NASA-CASE-NPO-15388-1] c 44 N82-10496  
Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589

## MODULES

Modular encoder  
[NASA-CASE-NPO-10629] c 08 N72-18184  
Solar cell module assembly jig  
[NASA-CASE-XGS-00829-1] c 44 N79-19447  
Method of fabricating a photovoltaic module of a substantially transparent construction  
[NASA-CASE-NPO-14303-1] c 44 N80-18550

## MODULUS OF ELASTICITY

Glass compositions with a high modulus of elasticity — nontoxic glass fibers  
[NASA-CASE-HQN-10274-1] c 27 N82-29451  
High modulus invert analog glass compositions containing beryllia  
[NASA-CASE-HQN-10931-2] c 27 N82-29452  
Non-toxic invert analog glass compositions of high modulus  
[NASA-CASE-HQN-10328-2] c 27 N82-29454  
High modulus rare earth and beryllium containing silicate glass compositions — for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455

## MOISTURE

Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080

## MOISTURE CONTENT

Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484  
Moisture content and gas sampling device — to test hermetically sealed electronic equipment  
[NASA-CASE-MS-18866-1] c 35 N82-26634

## MOISTURE METERS

Method of evaluating moisture barrier properties of encapsulating materials Patent  
[NASA-CASE-NPO-10051] c 18 N71-24934  
Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484

## MOLDING MATERIALS

Method for molding compounds Patent  
[NASA-CASE-XLA-01091] c 15 N71-10672  
Method of making a molded connector Patent  
[NASA-CASE-XMF-03498] c 15 N71-15986  
Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975  
Hydroforming techniques using epoxy molds Patent  
[NASA-CASE-XLE-05641-1] c 15 N71-26346  
Molding process for imidazopyrrolone polymers  
[NASA-CASE-LAR-10547-1] c 31 N74-13177  
Evacuated displacement compression molding  
[NASA-CASE-LAR-10782-1] c 31 N74-14133  
Molded composite pyrogen igniter for rocket motors — solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275  
Method of making a rocket nozzle  
[NASA-CASE-XMF-06884-1] c 20 N79-21123

## MOLDS

Apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917-2] c 15 N71-24836  
Technique of duplicating fragile core  
[NASA-CASE-XLA-07829] c 15 N72-16329  
Evacuated displacement compression molding  
[NASA-CASE-LAR-10782-1] c 31 N74-14133  
Molding apparatus — for thermosetting plastic compositions  
[NASA-CASE-LAR-10489-2] c 31 N74-32920  
Evacuated, displacement compression mold — of tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c 31 N75-13111  
Method of making an apertured casting — using duplicate mold  
[NASA-CASE-LEW-11169-1] c 37 N76-23570

## MOLECULAR BEAMS

Molecular beam velocity selector Patent  
[NASA-CASE-XLE-01533] c 11 N71-10777

Sputtering holes with ion beamlets  
[NASA-CASE-LEW-11646-1] c 20 N74-31269

## MOLECULAR CHAINS

Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104

## MOLECULAR GASES

Compact hydrogenator  
[NASA-CASE-NPO-11682-1] c 35 N74-15127

## MOLECULAR PUMPS

Omni-directional anisotropic molecular trap Patent  
[NASA-CASE-XGS-00783] c 30 N71-17788  
Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294

## MOLECULAR RELAXATION

Double-beam optical method and apparatus for measuring thermal diffusivity and other molecular dynamic processes in utilizing the transient thermal lens effect  
[NASA-CASE-NPO-14657-1] c 74 N81-17887

## MOLECULAR ROTATION

Diatomic infrared gasdynamic laser — for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c 36 N75-31426

## MOLECULAR SPECTROSCOPY

Dual resonant cavity absorption cell Patent  
[NASA-CASE-LAR-10305] c 14 N71-26137

## MOLECULES

Stabilization of He2(a 3 Sigma u+) molecules in liquid helium by optical pumping for vacuum UV laser 6  
[NASA-CASE-NPO-13993-1] c 72 N79-13826  
Improved process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N82-26462

## MOLTEN SALT ELECTROLYTES

Combined electrolysis device and fuel cell and method of operation Patent  
[NASA-CASE-XLE-01645] c 03 N71-20904  
Zinc-halide battery with molten electrolyte  
[NASA-CASE-NPO-11961-1] c 44 N76-18643

## MOLTEN SALTS

Molten salt pyrolysis of latex — synthetic hydrocarbon fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261

## MOLYBDENUM

Thermocouples of molybdenum and indium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12174-2] c 35 N79-14346

## MOLYBDENUM CARBIDES

Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00302] c 15 N71-16077

## MOLYBDENUM DISULFIDES

Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103

## MOMENTS OF INERTIA

Moment of inertia test fixture Patent  
[NASA-CASE-XGS-01023] c 14 N71-22992

## MOMENTUM

Attitude control and damping system for spacecraft Patent  
[NASA-CASE-XLA-02551] c 21 N71-21708  
Particle detection apparatus including a ballistic pendulum Patent  
[NASA-CASE-XMS-04201] c 14 N71-22990

## MONATOMIC GASES

Atomic hydrogen storage — cryotrapping and magnetic field strength  
[NASA-CASE-LEW-12081-2] c 28 N80-20402

## MONITORS

Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573  
Reduced bandwidth video communication system utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c 07 N71-23026  
Optical monitor panel Patent  
[NASA-CASE-XKS-03509] c 14 N71-23175  
Peak polarity selector Patent  
[NASA-CASE-FRC-10010] c 10 N71-24862  
Ripple indicator  
[NASA-CASE-KSC-10162] c 09 N72-11225  
Droplet monitoring probe  
[NASA-CASE-NPO-10985] c 14 N73-20478  
Automatic lightning detection and photographic system  
[NASA-CASE-KSC-10728-1] c 14 N73-32319  
Method and apparatus for optically monitoring the angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c 74 N74-21304  
Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315  
Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18193  
Intrusion detection method and apparatus — monitoring unwanted subterranean entry and departure  
[NASA-CASE-ARC-11317-1] c 35 N81-19430



Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698

**MONOCHROMATIC RADIATION**  
Continuous plasma light source  
[NASA-CASE-XNP-04167-2] c 25 N72-24753

Laser extensometer  
[NASA-CASE-MFS-19259-1] c 36 N78-14380

**MONOCHROMATORS**  
Analytical photoionization mass spectrometer with an argon gas filter between the light source and monochromator Patent  
[NASA-CASE-LAR-10180-1] c 06 N71-13461

Color television system  
[NASA-CASE-MSC-12146-1] c 07 N72-17109

**MONOMERS**  
Pressure transducer --- using a monomeric charge transfer complex sensor  
[NASA-CASE-NPO-11150] c 35 N78-17359

Bifunctional monomers having terminal oxime and cyano or amide groups  
[NASA-CASE-ARC-11253-3] c 27 N81-24256

Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13101-2] c 23 N81-29160

Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N81-31364

Preparation of crosslinked 1,2,4-oxadiazole polymer  
[NASA-CASE-ARC-11253-2] c 27 N82-24338

**MONOPOLE ANTENNAS**  
Antenna system using parasitic elements and two driven elements at 90 deg angle fed 180 deg out of phase Patent  
[NASA-CASE-XLA-00414] c 07 N70-38200

Flexible blade antenna Patent  
[NASA-CASE-MSC-12101] c 09 N71-18720

**MONOPROPELLANTS**  
Ignition system for monopropellant combustion devices Patent  
[NASA-CASE-XNP-00249] c 28 N70-38249

Ignition means for monopropellant Patent  
[NASA-CASE-XNP-00876] c 28 N70-41311

Low thrust monopropellant engine  
[NASA-CASE-GSC-12194-2] c 20 N82-18314

**MONOPULSE ANTENNAS**  
Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460

Low noise single aperture multimode monopulse antenna feed system Patent  
[NASA-CASE-XNP-01735] c 07 N71-22750

Electronic scanning of 2-channel monopulse patterns Patent  
[NASA-CASE-GSC-10299-1] c 09 N71-24804

Switchable beamwidth monopulse method and system  
[NASA-CASE-GSC-11924-1] c 33 N76-27472

**MONOPULSE RADAR**  
Polarization diversity monopulse tracking receiver Patent  
[NASA-CASE-XGS-03501] c 09 N71-20864

Monopulse tracking system Patent  
[NASA-CASE-XGS-01155] c 10 N71-21483

**MONOSTABLE MULTIVIBRATORS**  
Resettable monostable pulse generator Patent  
[NASA-CASE-GSC-11139] c 09 N71-27016

Monostable multivibrator with complementary NOR gates Patent  
[NASA-CASE-MSC-13492-1] c 10 N71-28860

**MOSSBAUER EFFECT**  
Mossbauer spectrometer radiation detector  
[NASA-CASE-LAR-11155-1] c 35 N74-15091

Method and apparatus for vibration analysis utilizing the Mossbauer effect  
[NASA-CASE-XMF-05882] c 35 N75-27329

**MOTION**  
Quick attach mechanism Patent  
[NASA-CASE-XFR-05421] c 15 N71-22994

**MOTION PICTURES**  
Real time moving scene holographic camera system  
[NASA-CASE-MFS-21087-1] c 35 N74-17153

Real time, large volume, moving scene holographic camera system  
[NASA-CASE-MFS-22537-1] c 35 N75-27328

**MOTION SIMULATORS**  
Kinesthetic control simulator --- for pilot training  
[NASA-CASE-LAR-10276-1] c 09 N75-15662

Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806

**MOTION STABILITY**  
Hydraulic drive mechanism Patent  
[NASA-CASE-XMS-03252] c 15 N71-10658

**MOTORS**  
Nonmagnetic thermal motor for a magnetometer  
[NASA-CASE-XAR-03786] c 09 N69-21313

System for maintaining a motor at a predetermined speed utilizing digital feedback means Patent  
[NASA-CASE-XMF-06892] c 09 N71-24805

Mechanical thermal motor  
[NASA-CASE-MFS-23062-1] c 37 N77-12402

Redundant motor drive system  
[NASA-CASE-MFS-23777-1] c 37 N80-32716

**MOUNTING**  
Thermobulb mount Patent  
[NASA-CASE-NPO-10158] c 33 N71-16356

Mount for thermal control system Patent  
[NASA-CASE-NPO-10138] c 33 N71-16357

Clamping assembly for inertial components Patent  
[NASA-CASE-XMS-02184] c 15 N71-20813

Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c 10 N73-25243

Lubricated journal bearing  
[NASA-CASE-LEW-11076-3] c 37 N75-30562

Translatory shock absorber for attitude sensors  
[NASA-CASE-MFS-22905-1] c 19 N76-22284

Deformable bearing seal  
[NASA-CASE-LEW-12527-1] c 37 N77-32500

Impact absorbing blade mounts for variable pitch blades  
[NASA-CASE-LEW-12313-1] c 37 N78-10468

Attaching of strain gages to substrates  
[NASA-CASE-FRC-10093-1] c 35 N80-20560

Unidirectional flexural pivot  
[NASA-CASE-GSC-12622-1] c 37 N81-22359

Clamp-mount device  
[NASA-CASE-MFS-25510-1] c 37 N82-11470

Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N82-24473

Adapter for mounting microphone flush with the external surface of the skin of a pressurized aircraft  
[NASA-CASE-FRC-11072-1] c 35 N82-24474

**MOVING TARGET INDICATORS**  
Automatic vehicle location system  
[NASA-CASE-NPO-11850-1] c 32 N74-12912

Interferometric locating system  
[NASA-CASE-NPO-14173-1] c 04 N80-32359

**MULTICHANNEL COMMUNICATION**  
Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c 08 N71-19420

Phase quadrature-plural channel data transmission system Patent  
[NASA-CASE-XAC-06302] c 08 N71-19763

Receiver with an improved phase lock loop in a multichannel telemetry system with suppressed carrier  
[NASA-CASE-NPO-11593-1] c 07 N73-28012

Miniature multichannel biotelemetry system  
[NASA-CASE-NPO-13065-1] c 52 N74-26625

Medical subject monitoring systems --- multichannel monitoring systems  
[NASA-CASE-MSC-14180-1] c 52 N76-14757

Multi-channel rotating optical interface for data transmission  
[NASA-CASE-NPO-14066-1] c 74 N79-34011

**MULTILAYER INSULATION**  
Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022

Panelized high performance multilayer insulation Patent  
[NASA-CASE-MFS-14023] c 33 N71-25351

Electrical apparatus for detection of thermal decomposition of insulation Patent  
[NASA-CASE-XMF-03968] c 14 N71-27186

Method of making an insulation foil  
[NASA-CASE-LEW-11484-1] c 24 N75-33181

Process for preparing high temperature polyimide film laminates  
[NASA-CASE-LAR-12742-1] c 24 N81-12174

Multilayer thermal protection system  
[NASA-CASE-LAR-12620-1] c 24 N82-32417

**MULTIPACTOR DISCHARGES**  
High power RF coaxial switch  
[NASA-CASE-NPO-14229-1] c 33 N80-18285

**MULTIPATH TRANSMISSION**  
Anti-multipath digital signal detector  
[NASA-CASE-LAR-11827-1] c 32 N77-10392

Large volume multiple-path nuclear pumped laser  
[NASA-CASE-LAR-12592-1] c 36 N82-13415

**MULTIPLE BEAM INTERVAL SCANNERS**  
Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c 07 N71-19854

Variable beamwidth antenna --- with multiple beam, variable feed system  
[NASA-CASE-GSC-11862-1] c 32 N76-18295

**MULTIPLE DOCKING ADAPTERS**  
Expanding center probe and drogue Patent  
[NASA-CASE-XMS-03613] c 31 N71-16346

**MULTIPLE OUTPUT PROGRAMS**  
Multi-computer multiple data path hardware exchange system  
[NASA-CASE-NPO-13422-1] c 60 N76-14818

## MULTIPLEXING

Doppler frequency spread correction device for multiplex transmissions  
[NASA-CASE-XGS-02749] c 07 N69-39978

Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c 07 N71-20814

Satellite interface synchronization system  
[NASA-CASE-GSC-10390-1] c 07 N72-11149

Method and apparatus for data compression by a decreasing slope threshold test  
[NASA-CASE-NPO-10769] c 08 N72-11171

Data multiplexer using tree switching configuration  
[NASA-CASE-NPO-11333] c 08 N72-22162

Television multiplexing system  
[NASA-CASE-KSC-10654-1] c 07 N73-30115

Asynchronous, multiplexing, single line transmission and recovery data system --- for satellite use  
[NASA-CASE-NPO-13321-1] c 32 N75-26195

Correlation type phase detector --- with time correlation integrator for frequency multiplexed signals  
[NASA-CASE-GSC-11744-1] c 33 N75-26243

System for producing chroma signals  
[NASA-CASE-MSC-14683-1] c 74 N77-18893

Fiber optic multiplex optical transmission system  
[NASA-CASE-KSC-11047-1] c 74 N78-14889

System for a displaying at a remote station data generated at a central station and for powering the remote station from the central station  
[NASA-CASE-GSC-12411-1] c 33 N81-14221

Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278

High-speed multiplexing of keyboard data inputs  
[NASA-CASE-NPO-14554-1] c 60 N81-27814

Multi-channel temperature measurement amplification system --- solar heating systems  
[NASA-CASE-MFS-23775-1] c 44 N82-16474

Electronic scanning pressure measuring system and transducer package  
[NASA-CASE-ARC-11361-1] c 35 N82-26635

Correlation spectrometer having high resolution and multiplexing capability  
[NASA-CASE-NPO-15558-1] c 35 N82-26636

**MULTIPLIERS**  
Pulse-width modulation multiplier Patent  
[NASA-CASE-XER-09213] c 07 N71-12390

Variable pulse width multiplier Patent  
[NASA-CASE-XLA-02850] c 09 N71-20447

Capacitance multiplier and filter synthesizing network  
[NASA-CASE-NPO-11948-1] c 33 N74-32712

Regulated high efficiency, lightweight capacitor-diode multiplier dc to dc converter  
[NASA-CASE-LEW-12791-1] c 33 N78-32341

**MULTISPECTRAL BAND SCANNERS**  
Optical process for producing classification maps from multispectral data  
[NASA-CASE-MSC-14472-1] c 43 N77-10584

Interactive color display for multispectral imagery using correlation clustering  
[NASA-CASE-MSC-16253-1] c 32 N79-20297

Multispectral scanner optical system  
[NASA-CASE-MSC-18255-1] c 74 N80-33210

Medical diagnosis system and method with multispectral imaging --- depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783

**MULTISPECTRAL LINEAR ARRAYS**  
Time delay and integration detectors using charge transfer devices  
[NASA-CASE-GSC-12324-1] c 33 N81-33403

Dual aperture multispectral Schmidt objective  
[NASA-CASE-GSC-12756-1] c 74 N82-30073

**MULTISPECTRAL PHOTOGRAPHY**  
Multispectral imaging system  
[NASA-CASE-MSC-12404-1] c 23 N73-13661

Optical process for producing classification maps from multispectral data  
[NASA-CASE-MSC-14472-1] c 43 N77-10584

Multispectral imaging and analysis system --- using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288

Interactive color display for multispectral imagery using correlation clustering  
[NASA-CASE-MSC-16253-1] c 32 N79-20297

**MULTISTAGE ROCKET VEHICLES**  
Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176

Steerable solid propellant rocket motor Patent  
[NASA-CASE-XNP-00234] c 28 N70-38645

Multi-mission module Patent  
[NASA-CASE-XMF-01543] c 31 N71-17730

Single action separation mechanism Patent  
[NASA-CASE-XLA-00188] c 15 N71-22874

Lateral displacement system for separated rocket stages Patent  
[NASA-CASE-XLA-04804] c 31 N71-23008



- Frangible link  
[NASA-CASE-MSC-11849-1] c 15 N72-22488
- MULTIVIBRATORS**  
Ultra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit Patent  
[NASA-CASE-XGS-00381] c 09 N70-34819  
Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00458] c 09 N70-38604  
Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00131] c 09 N70-38995  
High efficiency multivibrator Patent  
[NASA-CASE-XAC-00942] c 10 N71-16042  
A dc-coupled noninverting one-shot Patent  
[NASA-CASE-XNP-09450] c 10 N71-18723  
Multivibrator circuit with means to prevent false triggering from supply voltage fluctuations Patent  
[NASA-CASE-ARC-10137-1] c 09 N71-28468  
Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570
- MUSCLES**  
Subminiature insertable force transducer — including a strain gage to measure forces in muscles  
[NASA-CASE-NPO-13423-1] c 33 N75-31329  
Multifunctional transducer  
[NASA-CASE-NPO-14329-1] c 52 N81-20703
- MUSCULAR FUNCTION**  
Miniature muscle displacement transducer  
[NASA-CASE-NPO-13519-1] c 33 N76-19338  
Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072
- MUSCULOSKELETAL SYSTEM**  
Skeletal stressing method and apparatus Patent  
[NASA-CASE-ARC-10100-1] c 05 N71-24738
- MYOCARDIUM**  
Myocardium wall thickness transducer and measuring method  
[NASA-CASE-NPO-13644-1] c 52 N76-29895  
Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072

## N

- N-TYPE SEMICONDUCTORS**  
Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N79-12321
- NACELLES**  
Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c 28 N70-34788  
Nacelle afterbody for jet engines Patent  
[NASA-CASE-XLA-10450] c 28 N71-21493  
Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-2] c 07 N78-18066  
Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-3] c 07 N79-14096
- NASA PROGRAMS**  
Retractable environmental seal  
[NASA-CASE-MFS-23646-1] c 37 N79-22474
- NAVIGATION**  
Navigation system and method  
[NASA-CASE-GSC-12508-1] c 04 N81-26085
- NAVIGATION AIDS**  
Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c 04 N76-20114  
Ruler for making navigational computations  
[NASA-CASE-XNP-01458] c 04 N78-17031  
Low-frequency radio navigation system  
[NASA-CASE-NPO-15264-1] c 04 N81-22036  
System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
[NASA-CASE-FRC-11005-1] c 06 N82-16075  
Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 04 N82-26260
- NAVIGATION INSTRUMENTS**  
Sun angle calculator  
[NASA-CASE-MSC-12617-1] c 35 N76-29552  
Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716
- NAVIGATION SATELLITES**  
Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948
- NEAR INFRARED RADIATION**  
Collimator of multiple plates with axially aligned identical random arrays of apertures  
[NASA-CASE-MFS-20546-2] c 14 N73-30389
- NEGATIVE FEEDBACK**  
Complementary regenerative switch Patent  
[NASA-CASE-XGS-02751] c 09 N71-23015  
Solid-state current transformer  
[NASA-CASE-MFS-22560-1] c 33 N77-14335

## NEGATIVE RESISTANCE CIRCUITS

- General logic structure for custom LSI circuits  
[NASA-CASE-NPO-14410-2] c 33 N82-25440
- NEODYMIUM LASERS**  
Length controlled stabilized mode-lock ND YAG laser  
[NASA-CASE-GSC-11571-1] c 36 N77-25499
- NERVES**  
Implantable electrical device  
[NASA-CASE-GSC-12560-1] c 52 N82-29863
- NETWORK SYNTHESIS**  
Electromagnetic polarization systems and methods Patent  
[NASA-CASE-GSC-10021-1] c 09 N71-24595  
High speed phase detector Patent  
[NASA-CASE-XNP-01306-2] c 09 N71-24596  
Tuned analog network — bandpass filter networks  
[NASA-CASE-GSC-12650-1] c 33 N82-10324
- NEUROGLIA**  
Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738
- NEUROLOGY**  
Implantable electrical device  
[NASA-CASE-GSC-12560-1] c 52 N82-29863
- NEUTRALIZERS**  
Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c 33 N77-10429  
Method of neutralizing the corrosive surface of amine-cured epoxy resins  
[NASA-CASE-GSC-12686-1] c 27 N82-10227
- NEUTRON EMISSION**  
Deuteron pass through target — neutron emitting target  
[NASA-CASE-LEW-11866-1] c 72 N76-15860
- NICKEL**  
Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142  
Selective nickel deposition  
[NASA-CASE-LEW-10965-1] c 15 N72-25452  
Brazing alloy composition  
[NASA-CASE-XMF-06053] c 26 N75-27126  
Method of making reinforced composite structure  
[NASA-CASE-LEW-12619-1] c 24 N77-19171  
Directionally solidified eutectic gamma-gamma nickel-base superalloys  
[NASA-CASE-LEW-12905-1] c 26 N78-18183
- NICKEL ALLOYS**  
High temperature nickel-base alloy Patent  
[NASA-CASE-XLE-00151] c 17 N70-33283  
Nickel-base alloy Patent  
[NASA-CASE-XLE-00283] c 17 N70-36616  
Nickel-base alloy containing Mo-W-Al-Cr-Ta-Zr-C-Nb-B Patent  
[NASA-CASE-XLE-02082] c 17 N71-16026  
Nickel base alloy  
[NASA-CASE-LEW-10874-1] c 17 N72-22535  
Diffusion welding — heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c 37 N74-21055  
Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236  
Zirconium modified nickel-copper alloy  
[NASA-CASE-LEW-12245-1] c 26 N77-20201  
Directionally solidified eutectic gamma plus beta nickel-base superalloys  
[NASA-CASE-LEW-12906-1] c 26 N77-32279  
Nickel base alloy — for gas turbine engine stator vanes  
[NASA-CASE-LEW-12270-1] c 26 N72-32280  
Nickel ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505  
Overlay metallic-cermet alloy coating systems — for gas turbine engines  
[NASA-CASE-LEW-13639-1] c 27 N82-33522
- NICKEL CADMIUM BATTERIES**  
Heat flow calorimeter — measures output of Ni-Cd batteries  
[NASA-CASE-GSC-11434-1] c 34 N74-27859  
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[NASA-CASE-MFS-23270-1] c 44 N78-25531
- NICKEL COATINGS**  
Nickel aluminate coated low alloy stainless steel  
[NASA-CASE-LEW-11267-1] c 17 N73-32414  
Selective coating for solar panels — using black chrome and black nickel  
[NASA-CASE-LEW-12159-1] c 44 N78-19599
- NICKEL COMPOUNDS**  
Didymium hydrate additive to nickel hydroxide electrodes Patent  
[NASA-CASE-XGS-03505] c 03 N71-10608  
Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127

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- Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830  
Light weight nickel battery plaque  
[NASA-CASE-LEW-13349-1] c 44 N82-22673
- NICKEL ZINC BATTERIES**  
Additive for zinc electrodes  
[NASA-CASE-LEW-13286-1] c 44 N81-27597
- NIOBIUM**  
Triallyl-dihalotantalum and niobium compounds Patent  
[NASA-CASE-XNP-04023] c 06 N71-28808
- NITRAMINE PROPELLANTS**  
Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255
- NITRATES**  
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[NASA-CASE-MSC-18172-1] c 26 N80-19237
- NITRIC OXIDE**  
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[NASA-CASE-ARC-10814-2] c 07 N80-26298
- NITRIDES**  
Refractory coatings and method of producing the same  
[NASA-CASE-LEW-13169-1] c 26 N82-29415
- NITRILES**  
Intumescent paint containing nitrile rubber  
[NASA-CASE-ARC-10196-1] c 18 N73-13562  
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[NASA-CASE-LEW-12053-1] c 27 N78-15276  
Preparation of perfluorinated imidoylamidoximes — for eventual preparation of heat and chemical resistant polymers  
[NASA-CASE-ARC-11267-1] c 23 N80-26386
- NITRO COMPOUNDS**  
Intumescent coatings containing 4,4'-dinitrosulfanilide  
[NASA-CASE-ARC-11042-1] c 24 N78-14096
- NITROAMINES**  
Intumescent paints Patent  
[NASA-CASE-ARC-10099-1] c 18 N71-15469  
Polymers vehicles as carriers for sulfonic acid salt of nitrosubstituted aromatic amines  
[NASA-CASE-ARC-10325] c 06 N72-25147
- NITROGEN**  
III-V photocathode with nitrogen doping for increased quantum efficiency  
[NASA-CASE-NPO-12134-1] c 33 N76-31409
- NITROGEN COMPOUNDS**  
Method for preparing addition type polyimide prepreps  
[NASA-CASE-LAR-12054-2] c 27 N81-14078
- NITROGEN OXIDES**  
Combustion engine — for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497  
Combustor — low nitrogen oxide formation  
[NASA-CASE-NPO-13958-1] c 25 N79-11151
- NITROGEN TETROXIDE**  
Procedure and apparatus for determination of water in nitrogen tetroxide  
[NASA-CASE-NPO-10234] c 06 N72-17094
- NITROGUANIDINE**  
Hydrazinium nitroformate propellant stabilized with nitroguanidine  
[NASA-CASE-NPO-12000] c 27 N72-25699
- NODES (STANDING WAVES)**  
Systems for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N82-11861
- NOISE GENERATORS**  
Pseudo-noise test set for communication system evaluation — test signals  
[NASA-CASE-MFS-22671-1] c 35 N75-21582  
Method of and means for testing a tape record/playback system  
[NASA-CASE-MFS-22671-2] c 35 N77-17426
- NOISE MEASUREMENT**  
Ride quality meter  
[NASA-CASE-LAR-12882-1] c 54 N81-31848
- NOISE METERS**  
Instrumentation for measurement of aircraft noise and sonic boom  
[NASA-CASE-LAR-11173-1] c 35 N75-19614  
Differential sound level meter  
[NASA-CASE-LAR-12106-1] c 71 N78-14867  
Ride quality meter  
[NASA-CASE-LAR-12882-1] c 54 N81-31848
- NOISE REDUCTION**  
Jet aircraft configuration Patent  
[NASA-CASE-XLA-00087] c 02 N70-33332  
Cassegrain antenna subreflector flange for suppressing ground noise Patent  
[NASA-CASE-XNP-00683] c 09 N70-35425  
Device for suppressing sound and heat produced by high-velocity exhaust jets Patent  
[NASA-CASE-XMF-01813] c 28 N70-41582  
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[NASA-CASE-XGS-01812] c 07 N71-23001
- Audio signal processor Patent  
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- Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266
- Method and apparatus for eliminating coherent noise in a coherent energy imaging system without destroying spatial coherence  
[NASA-CASE-GSC-11133-1] c 23 N72-11568
- Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244
- Gas turbine exhaust nozzle --- for noise reduction  
[NASA-CASE-LEW-11569-1] c 07 N74-15453
- Totally confined explosive welding --- apparatus to reduce noise level and protect personnel during explosive bonding  
[NASA-CASE-LAR-10941-1] c 37 N74-21057
- Jet exhaust noise suppressor  
[NASA-CASE-LEW-11286-1] c 07 N74-27490
- Supersonic fan blading --- noise reduction in turbofan engines  
[NASA-CASE-LEW-11402-1] c 07 N74-28226
- Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270
- Noise suppressor --- for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418
- Abating exhaust noises in jet engines  
[NASA-CASE-ARC-10712-1] c 07 N74-33218
- Television noise reduction device  
[NASA-CASE-MSC-12607-1] c 32 N75-21485
- Cascade plug nozzle --- for jet noise reduction  
[NASA-CASE-LAR-11674-1] c 07 N76-18117
- Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c 07 N76-18131
- Apparatus for reducing aerodynamic noise in a wind tunnel  
[NASA-CASE-MFS-23099-1] c 09 N76-23273
- Optical noise suppression device and method --- laser light exposing film  
[NASA-CASE-MSC-12640-1] c 74 N76-31998
- Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055
- Magneto-optic detection system with noise cancellation  
[NASA-CASE-NPO-11954-1] c 35 N78-29421
- Totally confined explosive welding  
[NASA-CASE-LAR-10941-2] c 37 N79-13364
- Sound-suppressing structure with thermal relief  
[NASA-CASE-LEW-12658-1] c 71 N79-14871
- Acoustically swept rotor --- helicopter noise reduction  
[NASA-CASE-ARC-11106-1] c 05 N80-14107
- Support assembly for cryogenically coolable low-noise choke waveguide  
[NASA-CASE-NPO-14253-1] c 32 N80-32605
- Curved centerline air intake for a gas turbine engine  
[NASA-CASE-LEW-13201-1] c 07 N81-14999
- A rectangular rod-wall sound shield  
[NASA-CASE-LAR-12883-1] c 09 N81-29138
- Multiple pure tone elimination strut assembly --- air breathing engines  
[NASA-CASE-FRC-11062-1] c 71 N82-16800
- Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 34 N82-20465
- NOISE TEMPERATURE**  
Method and means for providing an absolute power measurement capability Patent  
[NASA-CASE-ERC-11020] c 14 N71-26774
- NOISE THRESHOLD**  
Frequency modulation demodulator threshold extension device Patent  
[NASA-CASE-MSC-12165-1] c 07 N71-33696
- NONADIABATIC CONDITIONS**  
Direct heating surface combustor  
[NASA-CASE-LEW-11877-1] c 34 N78-27357
- NONDESTRUCTIVE TESTS**  
Determination of spot weld quality Patent  
[NASA-CASE-XNP-02588] c 15 N71-18613
- Space simulator Patent  
[NASA-CASE-NPO-10141] c 11 N71-24964
- Apparatus for inspecting microfilm Patent  
[NASA-CASE-MFS-20240] c 14 N71-26788
- Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170
- Method and device for detecting voids in low density material Patent  
[NASA-CASE-MFS-20044] c 14 N71-28993
- Holographic system for nondestructive testing  
[NASA-CASE-MFS-21704-1] c 35 N75-25124
- Method and apparatus for nondestructive testing of pressure vessels  
[NASA-CASE-NPO-12142-1] c 38 N76-28563
- Non-destructive method for applying and removing instrumentation on helicopter rotor blades  
[NASA-CASE-LAR-11201-1] c 35 N78-24515
- Hybrid holographic non-destructive test system  
[NASA-CASE-MFS-23114-1] c 38 N78-32447
- NONEQUILIBRIUM CONDITIONS**  
Condition sensor system and method  
[NASA-CASE-MSC-14805-1] c 54 N78-32720
- NONEQUILIBRIUM PLASMAS**  
Probes having ring and primary sensor at same potential to prevent collection of stray wall currents in ionized gases  
[NASA-CASE-XLE-00690] c 25 N69-39884
- NONEQUILIBRIUM RADIATION**  
Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c 73 N78-19920
- NONFLAMMABLE MATERIALS**  
Intumescent paint containing nitrile rubber  
[NASA-CASE-ARC-10196-1] c 18 N73-13562
- Non-flammable elastomeric fiber from a fluorinated elastomer and containing an halogenated flame retardant  
[NASA-CASE-MSC-14331-1] c 27 N76-24405
- NONLINEAR FEEDBACK**  
Coherent receiver employing nonlinear coherence detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c 32 N74-30523
- Nonlinear nonsingular feedback shift registers  
[NASA-CASE-NPO-13451-1] c 33 N76-14373
- NONLINEAR FILTERS**  
Apparatus for damping operator induced oscillations of a controlled system --- flight control  
[NASA-CASE-FRC-11041-1] c 33 N82-18493
- NONLINEAR SYSTEMS**  
Phase detector assembly Patent  
[NASA-CASE-XMF-00701] c 09 N70-40272
- Nonlinear analog-to-digital converter Patent  
[NASA-CASE-XAC-04031] c 08 N71-18594
- Split range transducer  
[NASA-CASE-XLA-11189] c 10 N72-20222
- Contour measurement system  
[NASA-CASE-MFS-23726-1] c 43 N79-26439
- NOSE CONES**  
Automatically deploying nozzle exit cone extension Patent  
[NASA-CASE-XLE-01640] c 31 N71-15637
- Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984
- NOSE WHEELS**  
Nose gear steering system for vehicle with main skids Patent  
[NASA-CASE-XLA-01804] c 02 N70-34160
- NOTCH STRENGTH**  
Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583
- NOTCH TESTS**  
Vee-notching device --- with adjustable camage  
[NASA-CASE-MFS-20730-1] c 39 N74-13131
- Notch filter  
[NASA-CASE-MFS-23303-1] c 32 N77-18307
- NOTCHES**  
Notch filter  
[NASA-CASE-MFS-23303-1] c 32 N77-18307
- NOZZLE DESIGN**  
Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c 28 N70-33284
- Penshape exhaust nozzle for supersonic engine Patent  
[NASA-CASE-XLE-00057] c 28 N70-38711
- Telescoping-spike supersonic inlet for aircraft engines Patent  
[NASA-CASE-XLE-00005] c 28 N70-39899
- Automatically deploying nozzle exit cone extension Patent  
[NASA-CASE-XLE-01640] c 31 N71-15637
- Injector assembly for liquid fueled rocket engines Patent  
[NASA-CASE-XMF-00968] c 28 N71-15660
- Collapsible nozzle extension for rocket engines Patent  
[NASA-CASE-MFS-11497] c 28 N71-16224
- Gas turbine combustion apparatus Patent  
[NASA-CASE-XLE-103477-1] c 28 N71-20330
- Prestressed refractory structure Patent  
[NASA-CASE-XNP-02888] c 18 N71-21068
- Scanning nozzle plating system --- for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c 31 N74-23065
- Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055
- Variable area exhaust nozzle  
[NASA-CASE-LEW-12378-1] c 07 N79-14097
- Aircraft engine nozzle  
[NASA-CASE-ARC-10977-1] c 07 N80-32392
- Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371
- Method and system for nuclear waste disposal --- control valves for encapsulating wastes  
[NASA-CASE-NPO-15454-1] c 73 N82-12916
- Controlled overspray spray nozzle  
[NASA-CASE-MFS-25139-1] c 34 N82-13376
- NOZZLE FLOW**  
Control system for rocket vehicles Patent  
[NASA-CASE-XLA-01163] c 21 N71-15582
- Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c 31 N71-15647
- Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339
- Tertiary flow injection thrust vectoring system Patent  
[NASA-CASE-MFS-20831] c 28 N71-29153
- Multi-purpose wind tunnel reaction control model block  
[NASA-CASE-MSC-19706-1] c 09 N78-31129
- NOZZLE GEOMETRY**  
Method of making a rocket nozzle  
[NASA-CASE-XMF-06884-1] c 20 N79-21123
- NOZZLE INSERTS**  
Self-sealing, unbonded, rocket motor nozzle closure Patent  
[NASA-CASE-XLA-02651] c 28 N70-41967
- Wind tunnel supplementary Mach number minimum section insert  
[NASA-CASE-LAR-12532-1] c 09 N82-11088
- NUCLEAR EXPLOSION EFFECT**  
Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852
- NUCLEAR FUEL ELEMENTS**  
Nuclear fuel elements  
[NASA-CASE-XLE-00209] c 22 N73-32528
- NUCLEAR FUSION**  
Method and apparatus for producing concentric hollow spheres --- for nuclear fusion by inertial confinement  
[NASA-CASE-NPO-14596-2] c 31 N82-25401
- Method and apparatus for producing concentric hollow spheres  
[NASA-CASE-NPO-14596-3] c 27 N82-26461
- NUCLEAR MAGNETIC RESONANCE**  
Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266
- NUCLEAR POWER PLANTS**  
Self-adjusting multisegment, deployable, natural circulation radiator Patent  
[NASA-CASE-XHQ-03673] c 33 N71-29046
- NUCLEAR PUMPED LASERS**  
Volumetric direct nuclear pumped laser  
[NASA-CASE-LAR-12183-1] c 36 N79-18307
- NUCLEAR PUMPING**  
Large volume multiple-path nuclear pumped laser  
[NASA-CASE-LAR-12592-1] c 36 N82-13415
- NUCLEAR REACTOR CONTROL**  
Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597
- Control for nuclear thermionic power source  
[NASA-CASE-NPO-13114-2] c 73 N78-28913
- NUCLEAR REACTORS**  
Nuclear thermionic converter --- tungsten-thorium oxide rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891
- NUCLEATE BOILING**  
Method of improving heat transfer characteristics in a nucleate boiling process Patent  
[NASA-CASE-XMS-04268] c 33 N71-16277
- NUCLEATION**  
Method and apparatus for supercooling and solidifying substances --- containerless melts and space processing  
[NASA-CASE-MFS-25242-1] c 35 N81-24413
- NULL ZONES**  
Null device for hand controller Patent  
[NASA-CASE-XLA-01808] c 15 N71-20740
- NUMBER THEORY**  
Binary concatenated coding system  
[NASA-CASE-MSC-14082-1] c 60 N76-23850
- NUMERICAL CONTROL**  
Fringe counter for interferometers Patent  
[NASA-CASE-LAR-10204] c 14 N71-27215
- Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349
- Controller for computer control of brushless dc motors --- automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352
- Reconfiguring redundancy management  
[NASA-CASE-MSC-18488-1] c 60 N82-29013



## NUMERICAL INTEGRATION

Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437

## NUTATION

Method and means for damping nutation in a satellite Patent  
[NASA-CASE-XMF-00442] c 31 N71-10747

Nutation damper  
[NASA-CASE-GSC-11205-1] c 15 N73-25513

## NUTATION DAMPERS

Active nutation controller  
[NASA-CASE-GSC-12273-1] c 35 N80-21719

Method of and apparatus for damping nutation motion with minimum spin axis attitude disturbance  
[NASA-CASE-GSC-12551-1] c 18 N81-12156

## NUTS (FASTENERS)

Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922

Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489

Fastener stretcher  
[NASA-CASE-GSC-11149-1] c 15 N73-30457

High-torque open-end wrench  
[NASA-CASE-NPO-13541-1] c 37 N79-14383

Floating nut retention system  
[NASA-CASE-MSC-16938-1] c 37 N80-23653

## O

## O RING SEALS

High pressure four-way valve Patent  
[NASA-CASE-XNP-00214] c 15 N70-36908

Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N81-12422

Self-stabilizing radial face seal  
[NASA-CASE-LEW-12991-1] c 37 N81-24442

Circumferential shaft seal  
[NASA-CASE-LEW-12119-2] c 37 N81-26447

Unitary seal ring assembly — cryogenic applications  
[NASA-CASE-MFS-25678-1] c 37 N82-25517

## OBLIQUE WINGS

Oblique-wing supersonic aircraft  
[NASA-CASE-ARC-10470-3] c 05 N76-29217

## OCCLUSION

Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25640-1] c 52 N82-26962

## OCEAN CURRENTS

Method and apparatus for Delta K synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N82-28502

## OCEAN DATA ACQUISITIONS SYSTEMS

Oceanic wave measurement system  
[NASA-CASE-MFS-23862-1] c 48 N80-18667

## OCEAN SURFACE

Surface roughness measuring system — synthetic aperture radar measurements of ocean wave height and terrain peaks  
[NASA-CASE-NPO-13862-1] c 35 N79-10391

Oceanic wave measurement system  
[NASA-CASE-MFS-23862-1] c 48 N80-18667

## OCEAN THERMAL ENERGY CONVERSION

Ocean thermal plant  
[NASA-CASE-KSC-11034-1] c 44 N78-32542

## OFFSHORE PLATFORMS

Ocean thermal plant  
[NASA-CASE-KSC-11034-1] c 44 N78-32542

## OHMMETERS

Positive contact resistance soldering unit  
[NASA-CASE-KSC-10242] c 15 N72-23497

## OIL EXPLORATION

Underwater seismic source — for petroleum exploration  
[NASA-CASE-NPO-14255-1] c 46 N79-23555

Borehole geological assessment  
[NASA-CASE-NPO-14231-1] c 46 N80-10709

## OIL RECOVERY

Oil and fat absorbing polymers  
[NASA-CASE-NPO-11609-2] c 27 N77-31308

In-situ laser retorting of oil shale  
[NASA-CASE-LEW-12217-1] c 43 N78-14452

Crude oil desulfurization  
[NASA-CASE-NPO-14542-1] c 25 N82-23282

## OILS

Method of recording a gas flow pattern Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815

Oil and fat absorbing polymers  
[NASA-CASE-NPO-11609-2] c 27 N77-31308

## OMNIDIRECTIONAL ANTENNAS

Omnidirectional microwave spacecraft antenna Patent  
[NASA-CASE-XLA-03114] c 09 N71-22888

Stacked array of omnidirectional antennas  
[NASA-CASE-LAR-10545-1] c 09 N72-21244

Omnidirectional slot antenna for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c 09 N72-25247

## ONBOARD EQUIPMENT

Survival couch Patent  
[NASA-CASE-XLA-00118] c 05 N70-33285

Cryogenic storage system Patent  
[NASA-CASE-XMS-04390] c 31 N70-41871

Fiber optic vibration transducer and analyzer Patent  
[NASA-CASE-XMF-02433] c 14 N71-10616

Satellite appendage tie down cord Patent  
[NASA-CASE-XGS-02554] c 31 N71-21064

Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948

A dc servosystem including an ac motor Patent  
[NASA-CASE-NPO-10700] c 07 N71-33613

Collapsible Apollo couch  
[NASA-CASE-MSC-13140] c 05 N72-11085

Monostable multivibrator  
[NASA-CASE-GSC-10082-1] c 10 N72-20221

Delayed simultaneous release mechanism  
[NASA-CASE-GSC-10814-1] c 03 N73-20039

Electronic strain-level counter  
[NASA-CASE-LAR-10756-1] c 32 N73-26910

Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c 04 N76-20114

## OPERATIONAL AMPLIFIERS

Digital automatic gain amplifier  
[NASA-CASE-KSC-11008-1] c 33 N79-22373

Automatic level control circuit  
[NASA-CASE-KSC-11170-1] c 33 N81-29347

Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N82-11359

## OPHTHALMOLOGY

Ophthalmic method and apparatus  
[NASA-CASE-LEW-11669-1] c 05 N73-27062

Ophthalmic liquefaction pump  
[NASA-CASE-LEW-12051-1] c 52 N75-33640

## OPTICAL COMMUNICATION

Retrodirective optical system  
[NASA-CASE-XGS-04480] c 16 N69-27491

Optical communications system Patent  
[NASA-CASE-XLA-01090] c 07 N71-12389

Optical frequency waveguide and transmission system Patent  
[NASA-CASE-HQN-10541-4] c 16 N71-27183

Optical communications system Patent  
[NASA-CASE-XLA-01090] c 16 N71-28963

High pulse rate high resolution optical radar system  
[NASA-CASE-NPO-11426] c 07 N73-26119

Apparatus for simulating optical transmission links  
[NASA-CASE-GSC-11877-1] c 74 N76-18913

Fiber distributed feedback laser  
[NASA-CASE-NPO-13531-1] c 36 N76-24553

Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c 74 N76-30053

Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942

Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346

Fiber optic multiplex optical transmission system  
[NASA-CASE-KSC-11047-1] c 74 N78-14889

Fiber optic crossbar switch for automatically patching optical signals  
[NASA-CASE-KSC-11104-1] c 74 N81-12862

## OPTICAL COUPLING

Automatic quadrature control and measuring system — using optical coupling circuitry  
[NASA-CASE-MFS-21660-1] c 35 N74-21017

## OPTICAL DATA PROCESSING

Optical data processing using paraboloidal mirror segments  
[NASA-CASE-GSC-11296-1] c 23 N73-30666

Recorder/processor apparatus — for optical data processing  
[NASA-CASE-GSC-11553-1] c 35 N74-15831

Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-1] c 32 N79-19195

Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N80-32607

Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342

Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297

## OPTICAL DENSITY

Medical diagnosis system and method with multispectral imaging — depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783

## OPTICAL EMISSION SPECTROSCOPY

Maksutov spectrograph Patent  
[NASA-CASE-XLA-10402] c 14 N71-29041

## OPTICAL EQUIPMENT

Light detection instrument Patent  
[NASA-CASE-XGS-05534] c 23 N71-16355

Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c 23 N71-16365

Combined optical attitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268

Laser grating interferometer Patent  
[NASA-CASE-XLA-04295] c 16 N71-24170

Optical mirror apparatus Patent  
[NASA-CASE-ERC-10001] c 23 N71-24868

Method for generating ultra-precise angles Patent  
[NASA-CASE-XGS-04173] c 19 N71-26674

Petzval type objective including field shaping lens Patent  
[NASA-CASE-GSC-10700] c 23 N71-30027

Compact spectroradiometer  
[NASA-CASE-HQN-10683] c 14 N71-34389

Fine adjustment mount  
[NASA-CASE-MFS-20249] c 15 N72-11386

Method of coating solar cell with borosilicate glass and resultant product  
[NASA-CASE-GSC-11514-1] c 03 N72-24037

Light sensor  
[NASA-CASE-NPO-11311] c 14 N72-25414

Borescope with variable angle scope  
[NASA-CASE-MFS-15162] c 14 N72-32452

Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427

Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c 21 N73-19630

Infrared horizon locator  
[NASA-CASE-LAR-10726-1] c 14 N73-20475

Multiple pass reimagining optical system  
[NASA-CASE-ARC-10194-1] c 23 N73-20741

Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089

Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c 74 N74-20008

Method and apparatus for optically monitoring the angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c 74 N74-21304

Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040

Strain gauge ambiguity sensor for segmented mirror active optical system  
[NASA-CASE-MFS-20506-1] c 35 N75-12273

Optical alignment device  
[NASA-CASE-ARC-10932-1] c 74 N76-22993

Visual examination apparatus  
[US-PATENT-RE-28,921] c 52 N76-30793

Optical instrument employing reticle having preselected visual response pattern formed thereon  
[NASA-CASE-ARC-10976-1] c 74 N77-22950

Opto-mechanical subsystem with temperature compensation through isothermal design  
[NASA-CASE-GSC-12059-1] c 35 N77-27366

Method and apparatus for producing an image from a transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932

Method of treating the surface of a glass member  
[NASA-CASE-GSC-12110-1] c 27 N77-32308

Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854

Water system virus detection  
[NASA-CASE-MSC-16098-1] c 51 N79-10693

Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149

Heat reflecting field stop  
[NASA-CASE-LAR-12443-1] c 74 N82-19030

High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N82-24973

Dual aperture multispectral Schmidt objective  
[NASA-CASE-GSC-12756-1] c 74 N82-30073

## OPTICAL FILTERS

High temperature lens construction Patent  
[NASA-CASE-XNP-04111] c 14 N71-15622

Method and apparatus for eliminating coherent noise in a coherent energy imaging system without destroying spatial coherence  
[NASA-CASE-GSC-11133-1] c 23 N72-11568

Optical noise suppression device and method — laser light exposing film  
[NASA-CASE-MSC-12640-1] c 74 N76-31998

System for producing chroma signals  
[NASA-CASE-MSC-14683-1] c 74 N77-18893

Optical conversion method — for spacecraft television  
[NASA-CASE-MSC-12618-1] c 74 N78-17865

Partial polarizer filter  
[NASA-CASE-GSC-12225-1] c 74 N79-14891



**OPTICAL GYROSCOPES**

Optical gyroscope system  
[NASA-CASE-NPO-14258-1] c 35 N81-33448

**OPTICAL HETERODYNING**

Multispectral imaging system  
[NASA-CASE-MSC-12404-1] c 23 N73-13661  
Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942  
Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346

**OPTICAL MEASUREMENT**

Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c 20 N71-16340  
Ellipsoidal mirror reflectometer including means for averaging the radiation reflected from the sample Patent  
[NASA-CASE-XGS-05291] c 23 N71-16341  
Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040  
Hybrid holographic non-destructive test system  
[NASA-CASE-MFS-23114-1] c 38 N78-32447  
Plural output optometric sample cell and analysis system  
[NASA-CASE-NPO-10233-1] c 74 N78-33913  
Rotary target V-block — aligning wind tunnel apparatus for optical measurement  
[NASA-CASE-LAR-12007-2] c 74 N79-25876  
Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 35 N81-12386  
Apparatus for fiber optic liquid level sensing  
[NASA-CASE-MSC-18674-1] c 74 N81-24907  
Film advance indicator  
[NASA-CASE-LAR-12474-1] c 35 N82-26628

**OPTICAL MEASURING INSTRUMENTS**

Optically pumped resonance magnetometer for determining vectorial components in a spatial coordinate system Patent  
[NASA-CASE-XGS-04879] c 14 N71-20428  
Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673  
Optical systems having spatially invariant outputs  
[NASA-CASE-ERC-10248] c 14 N72-17323  
Optical probing of supersonic flows with statistical correlation  
[NASA-CASE-MFS-20642] c 14 N72-21407  
Multiparameter vision testing apparatus  
[NASA-CASE-MSC-13601-2] c 54 N75-27759  
Noncontacting method for measuring angular deflection  
[NASA-CASE-LAR-12178-1] c 74 N80-21138  
Visible and infrared polarization ratio spectrophotometer  
[NASA-CASE-LAR-12285-1] c 35 N80-28687  
Interferometer  
[NASA-CASE-NPO-14502-1] c 74 N81-17888  
Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N81-22894  
Optical crystal temperature gauge with fiber optic connections  
[NASA-CASE-MSC-18627-1] c 74 N82-30071

**OPTICAL PATHS**

Optical instruments  
[NASA-CASE-MSC-14096-1] c 74 N74-15095  
Large volume multiple-path nuclear pumped laser  
[NASA-CASE-LAR-12592-1] c 36 N82-13415

**OPTICAL PROPERTIES**

Optical torqueometer Patent  
[NASA-CASE-XLE-00503] c 14 N70-34818  
Quasi-optical microwave component Patent  
[NASA-CASE-ERC-10011] c 07 N71-29065  
Light sensor  
[NASA-CASE-NPO-11311] c 14 N72-25414  
Light direction sensor  
[NASA-CASE-NPO-11201] c 14 N72-27409  
Device and method for determining X ray reflection efficiency of optical surfaces  
[NASA-CASE-MFS-20243] c 23 N73-13662  
Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c 74 N74-20008  
Optically actuated two position mechanical mover  
[NASA-CASE-NPO-13105-1] c 37 N74-21060  
Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437  
Heat transparent high intensity high efficiency solar cell  
[NASA-CASE-LEW-12892-1] c 44 N81-27598

**OPTICAL PUMPING**

Optical pump and driver system for lasers  
[NASA-CASE-ERC-10283] c 16 N72-25485  
Laser head for simultaneous optical pumping of several dye lasers — with single flash lamp  
[NASA-CASE-LAR-11341-1] c 36 N75-19655

Stabilization of He2(a 3 Sigma u+ molecules in liquid helium by optical pumping for vacuum UV laser  
[NASA-CASE-NPO-13993-1] c 72 N79-13826  
Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N81-12407  
Active lamp pulse driver circuit — for use in laser transmitters  
[NASA-CASE-GSC-12566-1] c 36 N82-10390

**OPTICAL PYROMETERS**

Motion picture camera for optical pyrometry Patent  
[NASA-CASE-XLA-00062] c 14 N70-33254

**OPTICAL RADAR**

Acquisition and tracking system for optical radar  
[NASA-CASE-MFS-20125] c 16 N72-13437

**OPTICAL RANGE FINDERS**

Altitude sensing device  
[NASA-CASE-XMS-01994-1] c 14 N72-17326  
Optical range finder having nonoverlapping complete images  
[NASA-CASE-MSC-12105-1] c 14 N72-21409

**OPTICAL REFLECTION**

Hybrid holographic system using reflected and transmitted object beams simultaneously Patent  
[NASA-CASE-MFS-20074] c 16 N71-15565  
Method for generating ultra-precise angles Patent  
[NASA-CASE-XGS-04173] c 19 N71-26674  
Illumination system including a virtual light source Patent  
[NASA-CASE-HQN-10781] c 23 N71-30292  
Diffuse reflective coating  
[NASA-CASE-GSC-11214-1] c 06 N73-13128  
Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942  
Lightweight reflector assembly  
[NASA-CASE-NPO-13707-1] c 74 N77-28933  
Method and apparatus for splitting a beam of energy — optical communication  
[NASA-CASE-GSC-12083-1] c 73 N78-32848  
Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N81-22358

**OPTICAL RESONANCE**

Optically pumped resonance magnetometer for determining vectorial components in a spatial coordinate system Patent  
[NASA-CASE-XGS-04879] c 14 N71-20428  
Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653

**OPTICAL SCANNERS**

Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485  
Optical inspection apparatus Patent  
[NASA-CASE-XMF-00462] c 14 N70-34298  
Electro-optical scanning apparatus Patent Application  
[NASA-CASE-NPO-11106] c 14 N70-34697  
Multi-lobar scan horizon sensor Patent  
[NASA-CASE-XGS-00809] c 21 N70-35427  
Optical binocular scanning apparatus  
[NASA-CASE-NPO-11002] c 14 N72-22441  
Spacecraft attitude sensor  
[NASA-CASE-GSC-10890-1] c 21 N73-30640  
Optical instruments  
[NASA-CASE-MSC-14096-1] c 74 N74-15095  
Dual digital video switcher  
[NASA-CASE-KSC-10782-1] c 33 N75-30431  
Traffic survey system — using optical scanners  
[NASA-CASE-MFS-22631-1] c 66 N76-19888  
Optical scanner — laser doppler velocimeters  
[NASA-CASE-LAR-11711-1] c 74 N78-17866  
Device for measuring the contour of a surface  
[NASA-CASE-LAR-11869-1] c 74 N78-27904  
Velocity servo for continuous scan Fourier interference spectrometer  
[NASA-CASE-NPO-14093-1] c 35 N80-20563  
Method of growing a ribbon crystal particularly suited for facilitating automated control of ribbon width  
[NASA-CASE-NPO-14295-1] c 76 N80-32245  
Scanning afocal laser velocimeter projection lens system  
[NASA-CASE-LAR-12328-1] c 36 N82-32712

**OPTICAL TRACKING**

Sun tracker with rotatable plane-parallel plate and two photocells Patent  
[NASA-CASE-XGS-01159] c 21 N71-10678  
Optical tracker having overlapping reticles on parallel axes Patent  
[NASA-CASE-XGS-05715] c 23 N71-16100  
Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c 14 N71-26627  
Solar tracking system  
[NASA-CASE-MFS-23999-1] c 44 N81-24520

**OPTICAL TRANSFER FUNCTION**  
Electronic optical transfer function analyzer  
[NASA-CASE-MFS-21672-1] c 74 N76-19935

**ORTHOGONAL MULTIPLEXING THEORY****OPTICAL WAVEGUIDES**

Fiber optic transmission line stabilization apparatus and method  
[NASA-CASE-NPO-15036-1] c 74 N82-19029

**OPTIMAL CONTROL**

Energy saving electrical motor control system  
[NASA-CASE-MFS-25560-1] c 33 N82-30472

**OPTIMIZATION**

Maximum power point tracker Patent  
[NASA-CASE-GSC-10376-1] c 14 N71-27407

**ORAL HYGIENE**

Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862

**ORBITAL ASSEMBLY**

Structural members, method and apparatus  
[NASA-CASE-MSC-16217-1] c 31 N81-27323

**ORBITAL MANEUVERS**

Passive propellant system  
[NASA-CASE-MFS-23642-1] c 20 N80-10278

**ORBITAL MECHANICS**

A method of delivering a vehicle to earth orbit and returning the reusable portion thereof to earth  
[NASA-CASE-MSC-12391] c 30 N73-12884

**ORBITAL SPACE STATIONS**

Radial module space station Patent  
[NASA-CASE-XMS-01906] c 31 N70-41373  
Serpentuator Patent  
[NASA-CASE-XMF-05344] c 31 N71-16345  
Space manufacturing machine Patent  
[NASA-CASE-MFS-20410] c 15 N71-19214

**ORGANIC CHEMISTRY**

Process for interfacial polymerization of pyromellitic dianhydride and 1,2,4, 5-tetraamino-benzene Patent  
[NASA-CASE-XLA-03104] c 06 N71-11235  
Amino acid analysis  
[NASA-CASE-NPO-12130-1] c 25 N75-14844

**ORGANIC COMPOUNDS**

Process for preparation of dianilinosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230  
Dicyanoacetylene polymers Patent  
[NASA-CASE-XNP-03250] c 06 N71-23500  
Epoxy-aziridine polymer product Patent  
[NASA-CASE-NPO-10701] c 06 N71-28620  
Diffuse reflective coating  
[NASA-CASE-GSC-11214-1] c 06 N73-13128  
Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c 25 N76-18245  
Analysis of volatile organic compounds — trace amounts of organic volatiles in gas samples  
[NASA-CASE-MSC-14428-1] c 23 N77-17161  
Electrophotolysis oxidation system for measurement of organic concentration in water  
[NASA-CASE-MSC-16497-1] c 25 N82-12166

**ORGANIC SILICON COMPOUNDS**

Oxygen post-treatment of plastic surface coated with plasma polymerized silicon-containing monomers  
[NASA-CASE-ARC-10915-2] c 27 N79-18052  
Thermal control coatings based on trialkoxysilane hydrolysis binders — tolerance to ultraviolet radiation in vacuum  
[NASA-CASE-MFS-25620-1] c 24 N82-11118

**ORGANIC SULFUR COMPOUNDS**

Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246

**ORGANOMETALLIC COMPOUNDS**

Ammonium perchlorate composite propellant containing an organic transitional metal chelate catalytic additive Patent  
[NASA-CASE-LAR-10173-1] c 27 N71-14090  
Trialkyl-dihalotantalum and niobium compounds Patent  
[NASA-CASE-XNP-04023] c 06 N71-28808

**ORGANOMETALLIC POLYMERS**

Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363  
Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c 37 N74-21058

**ORIFICE FLOW**

Relief valve  
[NASA-CASE-XMS-05894-1] c 15 N69-21924

**ORIFICES**

Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736

**ORTHO HYDROGEN**

Cooling by conversion of para to ortho-hydrogen  
[NASA-CASE-GSC-12770-1] c 34 N82-10358

**ORTHO PARA CONVERSION**

Cooling by conversion of para to ortho-hydrogen  
[NASA-CASE-GSC-12770-1] c 34 N82-10358

**ORTHOGONAL MULTIPLEXING THEORY**

Minimal logic block encoder Patent  
[NASA-CASE-NPO-10595] c 10 N71-25917



## ORTHOGONALITY

- Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790

## ORTHOPEDICS

- Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-1] c 54 N76-22914  
Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-2] c 52 N81-25661

## ORTHOTROPIC CYLINDERS

- Method of making a rocket motor casing Patent  
[NASA-CASE-XLE-00409] c 28 N71-15658  
Rocket motor casing Patent  
[NASA-CASE-XLE-05689] c 28 N71-15659

## OSCILLATION DAMPERS

- Viscous-pendulum-damper Patent  
[NASA-CASE-XLA-02079] c 12 N71-16894  
Stabilization of gravity oriented satellites Patent  
[NASA-CASE-XAC-01591] c 31 N71-17729  
Suspended mass impact damper Patent  
[NASA-CASE-LAR-10193-1] c 15 N71-27146  
Wind tunnel model damper Patent  
[NASA-CASE-XLA-09480] c 11 N71-33612  
Method of and apparatus for damping nutation motion with minimum spin axis attitude disturbance  
[NASA-CASE-GSC-12551-1] c 18 N81-12156  
Apparatus for damping operator induced oscillations of a controlled system — flight control  
[NASA-CASE-FRC-11041-1] c 33 N82-18493

## OSCILLATIONS

- Parasitic suppressing circuit  
[NASA-CASE-ERC-10403-1] c 10 N73-26228

## OSCILLATORS

- Electromagnetic mirror drive system  
[NASA-CASE-XLA-03724] c 14 N69-27461  
Frequency control network for a current feedback oscillator Patent  
[NASA-CASE-GSC-10041-1] c 10 N71-19418  
Static inverter Patent  
[NASA-CASE-XGS-05289] c 09 N71-19470  
Signal ratio system utilizing voltage controlled oscillators Patent  
[NASA-CASE-XMF-04367] c 09 N71-23545  
Pneumatic oscillator Patent  
[NASA-CASE-LEW-10345-1] c 10 N71-25899  
Wideband VCO with high phase stability Patent  
[NASA-CASE-XLA-03893] c 10 N71-27271  
Variable frequency oscillator with temperature compensation Patent  
[NASA-CASE-XNP-03916] c 09 N71-28810  
Inverter oscillator with voltage feedback  
[NASA-CASE-NPO-10760] c 09 N72-25254  
Controlled oscillator system with a time dependent output frequency  
[NASA-CASE-NPO-11962-1] c 33 N74-10194  
Ultra-stable oscillator with complementary transistors  
[NASA-CASE-GSC-11513-1] c 33 N74-20862  
LC-oscillator with automatic stabilized amplitude via bias current control — power supply circuit for transducers  
[NASA-CASE-MFS-21698-1] c 33 N74-26732  
Frequency modulated oscillator  
[NASA-CASE-MFS-23181-1] c 33 N77-17351  
Distributed feedback acoustic surface wave oscillator  
[NASA-CASE-NPO-13673-1] c 71 N77-26919  
JFET oscillator  
[NASA-CASE-GSC-12555-1] c 33 N80-26601  
Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349  
Laser resonator  
[NASA-CASE-GSC-12565-1] c 36 N82-24485

## OSCILLOSCOPES

- Waveform simulator Patent  
[NASA-CASE-NPO-10251] c 10 N71-27365  
Method and apparatus for mapping the sensitivity of the face of a photodetector specifically a PMT  
[NASA-CASE-LAR-10320-1] c 09 N72-23172  
Exposure interlock for oscilloscope cameras  
[NASA-CASE-LAR-10319-1] c 14 N73-32322  
X-Y alphanumeric character generator for oscilloscopes  
[NASA-CASE-GSC-11582-1] c 33 N75-19517

## OUTER PLANETS EXPLORERS

- Spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c 35 N75-19613

## OUTGASSING

- Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c 23 N71-16365  
Process for glass coating an ion accelerator gnd Patent  
[NASA-CASE-LEW-10278-1] c 15 N71-28582  
Low outgassing polydimethylsiloxane material and preparation thereof  
[NASA-CASE-GSC-11358-1] c 06 N73-26100

## OUTLET FLOW

- Amplified wind turbine apparatus  
[NASA-CASE-MFS-23830-1] c 44 N82-24639

## OUTPUT

- Nonlinear nonsingular feedback shift registers  
[NASA-CASE-NPO-13451-1] c 33 N76-14373

## OVENS

- Heat shield oven  
[NASA-CASE-XMS-04318] c 15 N69-27871  
Thermocouple, multiple junction reference oven  
[NASA-CASE-FRC-10112-1] c 35 N81-26431

## OVERVOLTAGE

- Protective circuit of the spark gap type  
[NASA-CASE-XAC-08981] c 09 N69-39897  
Power responsive overload sensing circuit Patent  
[NASA-CASE-GSC-10667-1] c 10 N71-33129  
Overvoltage protection network  
[NASA-CASE-ARC-10197-1] c 33 N74-17929  
Overload protection system for power inverter  
[NASA-CASE-NPO-13872-1] c 33 N78-10377

## OXAZOLE

- Preparation of heterocyclic block copolymer omega-diamidoximes  
[NASA-CASE-ARC-11060-1] c 27 N79-22300  
The 1,2,4-oxadiazole elastomers — heat resistant polymers  
[NASA-CASE-ARC-11253-1] c 27 N81-17262  
Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353

## OXIDATION

- Silicide coatings for refractory metals Patent  
[NASA-CASE-XLE-10910] c 18 N71-29040  
Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c 25 N75-12086  
Hydrogen rich gas generator  
[NASA-CASE-NPO-13464-2] c 44 N76-29704  
Process of forming catalytic surfaces for wet oxidation reactions  
[NASA-CASE-MSC-14831-1] c 25 N78-10225  
Compound oxidized styrylphosphine — flame resistant vinyl polymers  
[NASA-CASE-MSC-14903-2] c 27 N80-10358  
Method and apparatus for strengthening boron fibers — high temperature oxidation  
[NASA-CASE-LEW-13826-1] c 24 N82-26385

## OXIDATION RESISTANCE

- Nickel-base alloy containing Mo-W-Al-Cr-Ta-Zr-C-Nb-B Patent  
[NASA-CASE-XLE-02082] c 17 N71-16026  
Method of protecting the surface of a substrate — by applying aluminate coating  
[NASA-CASE-LEW-11696-1] c 37 N75-13261  
Duplex aluminized coatings  
[NASA-CASE-LEW-11696-2] c 26 N75-19408  
High temperature oxidation resistant cermet compositions  
[NASA-CASE-NPO-13666-1] c 27 N77-13217  
High temperature resistant cermet and ceramic compositions  
[NASA-CASE-NPO-13690-2] c 27 N79-14213  
Method of making bearing materials — self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11930-4] c 24 N79-17916  
Improved thermal barrier coating system  
[NASA-CASE-LEW-13324-1] c 26 N82-26431  
Nical ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505

## OXIDATION-REDUCTION REACTIONS

- Electrochemical cell for rebalancing REDOX flow system  
[NASA-CASE-LEW-13150-1] c 44 N79-26474  
Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-1] c 33 N80-20487  
Method of making formulated plastic separators for soluble electrode cells  
[NASA-CASE-LEW-12358-2] c 25 N82-21268

## OXIDE FILMS

- Method of forming oxide coatings  
[NASA-CASE-LEW-13132-1] c 44 N81-27616  
Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 25 N82-26397

## OXIDES

- Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029

## OXIDIZERS

- Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c 03 N71-11052  
Injection head for delivering liquid fuel and oxidizers  
[NASA-CASE-NPO-10046] c 28 N72-17843

## OXIMETRY

- Method and apparatus for continuously monitoring blood oxygenation, blood pressure, pulse rate and the pressure pulse curve utilizing an ear oximeter as transducer Patent  
[NASA-CASE-XAC-05422] c 04 N71-23185

## OXYGEN

- Analytical test apparatus and method for determining oxide content of alkali metal Patent  
[NASA-CASE-XLE-01997] c 06 N71-23527  
Method for removing oxygen impurities from cesium Patent  
[NASA-CASE-XNP-04262-2] c 17 N71-26773  
Method of detecting oxygen in a gas  
[NASA-CASE-LAR-10668-1] c 06 N73-16106  
Method for obtaining oxygen from lunar or similar soil  
[NASA-CASE-MSC-12408-1] c 46 N74-13011  
Nonflammable coating compositions — for use in high oxygen environments  
[NASA-CASE-MFS-20486-2] c 27 N74-17283  
State-of-charge coulometer  
[NASA-CASE-NPO-15759-1] c 35 N82-26630

## OXYGEN CONSUMPTION

- Method and system for respiration analysis Patent  
[NASA-CASE-XFR-08403] c 05 N71-11202

## OXYGEN FLUORIDES

- Utilization of oxygen difluoride for syntheses of fluoropolymers  
[NASA-CASE-NPO-12061-1] c 27 N76-16228

## OXYGEN METABOLISM

- Metabolic analyzer — for measuring metabolic rate and breathing dynamics of human beings  
[NASA-CASE-MFS-21415-1] c 52 N74-20728

## OXYGEN PLASMA

- Oxygen post-treatment of plastic surface coated with plasma polymerized silicon-containing monomers  
[NASA-CASE-ARC-10915-2] c 27 N79-18052

## OXYGEN REGULATORS

- Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27664

## OXYGEN SUPPLY EQUIPMENT

- Self-contained breathing apparatus  
[NASA-CASE-MSC-14733-1] c 54 N76-24900  
Slow opening valve  
[NASA-CASE-MSC-20112-1] c 37 N82-28641

## OZONE

- Thermoluminescent aerosol analysis  
[NASA-CASE-LAR-12046-1] c 25 N78-15210  
Ozonation of cooling tower waters  
[NASA-CASE-NPO-14340-1] c 45 N80-14579  
Curable liquid hydrocarbon prepolymers containing hydroxyl groups and process for producing same  
[NASA-CASE-NPO-13137-1] c 27 N80-32514

## P

## P-I-N JUNCTIONS

- High voltage V-groove solar cell  
[NASA-CASE-LEW-13401-2] c 44 N82-24717

## P-N JUNCTIONS

- Thin window, drifted silicon, charged particle detector  
[NASA-CASE-XLE-10529] c 14 N69-23191  
Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980] c 09 N69-27422  
Radiation resistant silicon semiconductor devices Patent  
[NASA-CASE-XGS-07801] c 09 N71-12513  
Biomedical radiation detecting probe Patent  
[NASA-CASE-XMS-01177] c 05 N71-19440  
Method of making electrical contact on silicon solar cell and resultant product Patent  
[NASA-CASE-XLE-04787] c 03 N71-20492  
Method of changing the conductivity of vapor deposited gallium arsenide by the introduction of water into the vapor deposition atmosphere Patent  
[NASA-CASE-XNP-01961] c 26 N71-29156  
Method of making semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980-2] c 14 N72-28438  
Semiconductor surface protection material  
[NASA-CASE-ERC-10339-1] c 18 N73-30532  
Method and apparatus for measuring minority carrier lifetimes and bulk diffusion length in P-N junction solar cells  
[NASA-CASE-NPO-14100-1] c 44 N79-12541  
Back wall solar cell  
[NASA-CASE-LEW-12236-2] c 44 N79-14528

## P-TYPE SEMICONDUCTORS

- Semiconductor material and method of making same Patent  
[NASA-CASE-XLE-02798] c 26 N71-23654  
Integrated P-channel MOS gyrator  
[NASA-CASE-MFS-22343-1] c 33 N74-34638  
Method of fabricating Schottky Barrier solar cell  
[NASA-CASE-NPO-13689-4] c 44 N82-28780

## PACKAGES

- Impact testing machine Patent  
[NASA-CASE-XNP-04817] c 14 N71-23225  
One hand backpack harness  
[NASA-CASE-LAR-10102-1] c 05 N72-23085



## PACKAGING

- Folding apparatus Patent  
[NASA-CASE-XLA-00137] c 15 N70-33180
- Reflector space satellite Patent  
[NASA-CASE-XLA-00138] c 31 N70-37981
- Apparatus and method for skin packaging articles  
[NASA-CASE-MFS-20855] c 15 N73-27405
- Double-sided solar cell package  
[NASA-CASE-NPO-14199-1] c 44 N79-25482

## PACKING DENSITY

- Micropacked column for a chromatographic system  
[NASA-CASE-XNP-04816] c 06 N69-39936

## PACKINGS (SEALS)

- Fluid seal for rotating shafts  
[NASA-CASE-LEW-11676-1] c 37 N76-22541

## PAD

- Lubricated journal bearing  
[NASA-CASE-LEW-11076-3] c 37 N75-30562

## PAINTS

- Intumescent paints Patent  
[NASA-CASE-ARC-10099-1] c 18 N71-15469
- Alkali metal silicate protective coating Patent  
[NASA-CASE-XGS-04799] c 18 N71-24183
- Inorganic thermal control pigment Patent  
[NASA-CASE-XNP-02139] c 18 N71-24184

## PALLADIUM

- Electrically conductive palladium containing polyimide films  
[NASA-CASE-LAR-12705-1] c 25 N82-26396

## PALLADIUM COMPOUNDS

- Prevention of pressure build-up in electrochemical cells Patent  
[NASA-CASE-XGS-01419] c 03 N70-41864
- Process for separation of dissolved hydrogen from water by use of palladium and process for coating palladium with palladium black  
[NASA-CASE-MSC-13335-1] c 06 N72-31140

## PANELS

- All-directional fastener Patent  
[NASA-CASE-XLA-01807] c 15 N71-10799
- Panelized high performance multilayer insulation Patent  
[NASA-CASE-MFS-14023] c 33 N71-25351
- Solar panel fabrication Patent  
[NASA-CASE-XNP-03413] c 03 N71-26726
- Method of making pressurized panel Patent  
[NASA-CASE-XLA-08916] c 15 N71-29018
- Honeycomb panels formed of minimal surface periodic tubule layers  
[NASA-CASE-ERC-10364] c 18 N72-25540
- Pressurized panel  
[NASA-CASE-XLA-08916-2] c 14 N73-28487
- Ultrasonic scanner for radial and flat panels  
[NASA-CASE-MFS-20335-1] c 35 N74-10415
- Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040
- Method of making a composite sandwich lattice structure  
[NASA-CASE-LAR-11898-2] c 24 N78-17149
- Selective coating for solar panels — using black chrome and black nickel  
[NASA-CASE-LEW-12159-1] c 44 N78-19599
- Hexagon solar power panel  
[NASA-CASE-NPO-12148-1] c 44 N78-27515
- Aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-3] c 44 N80-16452
- Structural wood panels with improved fire resistance  
[NASA-CASE-ARC-11174-1] c 24 N81-13999
- Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 33 N82-23396

## PAPER (MATERIAL)

- Process for purification of waste water produced by a Kraft process pulp and paper mill  
[NASA-CASE-NPO-13847-2] c 85 N79-17747

## PAPERS

- Guide for a typewriter  
[NASA-CASE-MFS-15218-1] c 37 N77-19457

## PARA HYDROGEN

- Cooling by conversion of para to ortho-hydrogen  
[NASA-CASE-GSC-12770-1] c 34 N82-10358

## PARABOLIC ANTENNAS

- Antenna beam-shaping apparatus Patent  
[NASA-CASE-XNP-00611] c 09 N70-35219
- Reversible motion drive system Patent  
[NASA-CASE-NPO-10173] c 15 N71-24696
- Switchable beamwidth monopulse method and system  
[NASA-CASE-GSC-11924-1] c 33 N76-27472
- Telescoping columns — parabolic antenna support  
[NASA-CASE-LAR-12195-1] c 31 N81-27324
- Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 32 N82-10287

## PARABOLIC REFLECTORS

- Parabolic reflector horn feed with spillover correction Patent  
[NASA-CASE-XNP-00540] c 09 N70-35382
- Foldable solar concentrator Patent  
[NASA-CASE-XLA-04622] c 03 N70-41580
- Collapsible reflector Patent  
[NASA-CASE-XMS-03454] c 09 N71-20658
- Plural beam antenna  
[NASA-CASE-GSC-11013-1] c 09 N73-19234
- Composite antenna feed  
[NASA-CASE-GSC-11046-1] c 07 N73-28013
- Single frequency, two feed dish antenna having switchable beamwidth  
[NASA-CASE-GSC-11968-1] c 32 N76-15329
- Sun tracking solar energy collector  
[NASA-CASE-NPO-13921-1] c 44 N79-14526
- Horizontally mounted solar collector  
[NASA-CASE-MFS-23349-1] c 44 N79-23481
- Solar concentrator  
[NASA-CASE-MFS-23727-1] c 44 N80-14473
- Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N81-22358

## PARABOLOID MIRRORS

- Optical data processing using paraboloidal mirror segments  
[NASA-CASE-GSC-11296-1] c 23 N73-30666
- Three mirror glancing incidence system for X-ray telescope  
[NASA-CASE-MFS-21372-1] c 74 N74-27866
- Multiple-beam, high-power, precision pointing antenna system  
[NASA-CASE-NPO-15406-1] c 33 N82-12345

## PARACHUTE DESCENT

- Parachute glider Patent  
[NASA-CASE-XLA-00898] c 02 N70-36804
- Vehicle parachute and equipment jettison system Patent  
[NASA-CASE-XLA-00195] c 02 N70-38009
- Line cutter Patent  
[NASA-CASE-XMS-04072] c 15 N70-42017
- Vortex breach high pressure gas generator  
[NASA-CASE-LAR-10549-1] c 31 N73-13898

## PARACHUTE FABRICS

- Lightweight, variable solidity knitted parachute fabric — for aerodynamic decelerators  
[NASA-CASE-LAR-10776-1] c 02 N74-10034
- Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330

## PARACHUTES

- System for stabilizing torque between a balloon and gondola  
[NASA-CASE-GSC-11077-1] c 02 N73-13008
- Deploy/release system — model aircraft flight control  
[NASA-CASE-LAR-11575-1] c 02 N76-16014
- System and method for refurbishing and processing parachutes — monorail conveyor system  
[NASA-CASE-KSC-11042-2] c 02 N81-26073
- Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330

## PARAGLIDERS

- Parachute glider Patent  
[NASA-CASE-XLA-00898] c 02 N70-36804

## PARALLAX

- Projection system for display of parallax and perspective  
[NASA-CASE-MFS-23194-1] c 35 N78-17357

## PARALLEL PLATES

- Parallel plate viscometer Patent  
[NASA-CASE-XNP-09462] c 14 N71-17584
- Dynamic capacitor having a peripherally driven element and system incorporating the same  
[NASA-CASE-XNP-02899-1] c 33 N79-21265
- Multiple plate hydrostatic viscous damper  
[NASA-CASE-LEW-12445-1] c 37 N81-22360

## PARALLEL PROCESSING (COMPUTERS)

- Digital data reformatter/deserializer  
[NASA-CASE-NPO-13676-1] c 60 N79-20751
- Massively parallel processor computer  
[NASA-CASE-GSC-12223-1] c 60 N79-27864

## PARALLELOGRAMS

- Unidirectional flexural pivot  
[NASA-CASE-GSC-12622-1] c 37 N81-22359

## PARAMETRIC AMPLIFIERS

- Parametric amplifiers with idler circuit feedback  
[NASA-CASE-LAR-10253-1] c 09 N72-25258
- Millimeter wave pumped parametric amplifier  
[NASA-CASE-GSC-11617-1] c 33 N74-32660

## PARAMETRIC FREQUENCY CONVERTERS

- Method and apparatus for quadrature-phase-shift-key and linear phase modulation  
[NASA-CASE-NPO-14444-1] c 33 N81-15192

## PARAWINGS

- Wing deployment method and apparatus Patent  
[NASA-CASE-XMS-00907] c 02 N70-41630

## PARKING

- Automated multi-level vehicle parking system  
[NASA-CASE-NPO-13058-1] c 37 N77-22480

## PARTIAL PRESSURE

- Vapor pressure measuring system and method Patent  
[NASA-CASE-XMS-01618] c 14 N71-20741

## PARTICLE ACCELERATION

- Molecular beam velocity selector Patent  
[NASA-CASE-XLE-01533] c 11 N71-10777
- Dust particle injector for hypervelocity accelerators Patent  
[NASA-CASE-XGS-06628] c 24 N71-16213

## PARTICLE ACCELERATOR TARGETS

- Dispensing targets for ion beam particle generators  
[NASA-CASE-NPO-13112-1] c 73 N74-26767
- Deuterium pass through target — neutron emitting target  
[NASA-CASE-LEW-11866-1] c 72 N76-15860
- Closed loop spray cooling apparatus — for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c 31 N78-17237

## PARTICLE BEAMS

- Particle beam measurement apparatus using beam kinetic energy to change the heat sensitive resistance of the detection probe Patent  
[NASA-CASE-XLE-00243] c 14 N70-38602
- Doppler shift system — system for measuring velocities of radiating particles  
[NASA-CASE-HQN-10740-1] c 72 N74-19310

## PARTICLE COLLISIONS

- Particle detection apparatus including a ballistic pendulum Patent  
[NASA-CASE-XMS-04201] c 14 N71-22990

## PARTICLE DENSITY (CONCENTRATION)

- Micrometeroid velocity measuring device Patent  
[NASA-CASE-XLA-00495] c 14 N70-41332

## PARTICLE DIFFUSION

- Acoustic particle separation  
[NASA-CASE-NPO-15559-1] c 71 N82-29112

## PARTICLE EMISSION

- Extended area semiconductor radiation detectors and a novel readout arrangement Patent  
[NASA-CASE-XGS-03230] c 14 N71-23401
- Coincidence apparatus for detecting particles  
[NASA-CASE-XLA-07813] c 14 N72-17328

## PARTICLE ENERGY

- Particle detection apparatus Patent  
[NASA-CASE-XLA-00135] c 14 N70-33322
- Particulate and aerosol detector  
[NASA-CASE-LAR-11434-1] c 35 N76-22509

## PARTICLE MASS

- Cosmic dust analyzer  
[NASA-CASE-MSC-13802-2] c 35 N76-15431
- Microbalance — for measuring particle mass  
[NASA-CASE-MSC-11242] c 35 N78-17358

## PARTICLE MOTION

- Moving particle composition analyzer  
[NASA-CASE-GSC-11889-1] c 35 N76-16393

## PARTICLE PRECIPITATION

- Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N82-27087

## PARTICLE PRODUCTION

- Production of I-123  
[NASA-CASE-LEW-11390-3] c 25 N76-29379

## PARTICLE SIZE DISTRIBUTION

- Micropacked column for a chromatographic system  
[NASA-CASE-XNP-04816] c 06 N69-39936
- Apparatus for making a metal slurry product Patent  
[NASA-CASE-XLE-00010] c 15 N70-33382
- Method of producing refractory composites containing tantalum carbide, hafnium carbide, and hafnium boride Patent  
[NASA-CASE-XLE-03940] c 18 N71-26153
- Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c 37 N75-19683
- Apparatus for handling micron size range particulate material  
[NASA-CASE-NPO-10151] c 37 N78-17386
- Frequency-scanning particle size spectrometer  
[NASA-CASE-NPO-13606-2] c 35 N80-18364
- Process for preparation of large-particle-size monodisperse latexes  
[NASA-CASE-MFS-25000-1] c 25 N81-19242
- Polyvinyl alcohol battery separator containing inert filler — alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615
- Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 34 N82-24448
- Acoustic particle separation  
[NASA-CASE-NPO-15559-1] c 71 N82-29112

## PARTICLE TRAJECTORIES

- Micrometeroid velocity and trajectory analyzer  
[NASA-CASE-GSC-11892-1] c 35 N76-15433



- Direction sensitive laser velocimeter — determining the direction of particles using a helium-neon laser  
[NASA-CASE-LAR-12177-1] c 36 N81-24422
- PARTICLES**  
Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c 15 N71-20440  
Apparatus for producing metal powders  
[NASA-CASE-XLE-06461-2] c 17 N72-28535  
Particle parameter analyzing system — x-y plotter circuits and display  
[NASA-CASE-XLE-06094] c 33 N78-17293  
Surfactant-assisted liquefaction of particulate carbonaceous substances  
[NASA-CASE-NPO-13904-1] c 25 N79-11152
- PARTICULATE SAMPLING**  
Apparatus for sampling particulates in gases  
[NASA-CASE-HQN-10037-1] c 14 N73-27376  
Electrophoretic sample insertion — device for uniformly distributing samples in flow path  
[NASA-CASE-MFS-21395-1] c 25 N74-26948  
Sampler of gas borne particles  
[NASA-CASE-NPO-13396-1] c 35 N76-18401  
Fine particulate capture device  
[NASA-CASE-LEW-11583-1] c 35 N79-17192  
Biocontamination and particulate detection system  
[NASA-CASE-NPO-13953-1] c 35 N79-28527
- PASSAGEWAYS**  
Inflatable tether Patent  
[NASA-CASE-XMS-10993] c 15 N71-28936  
Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25640-1] c 52 N82-26962
- PASSIVE SATELLITES**  
Passive communication satellite Patent  
[NASA-CASE-XLA-00210] c 30 N70-40309  
Method and apparatus for determining electromagnetic characteristics of large surface area passive reflectors  
[NASA-CASE-XGS-02608] c 07 N70-41678  
Method of making an inflatable panel Patent  
[NASA-CASE-XLA-03497] c 15 N71-23052
- PATENT APPLICATIONS**  
Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 28 N82-26481
- PATENTS**  
Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072
- PATIENTS**  
Stretcher Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159
- PATTERN RECOGNITION**  
Surface roughness detector Patent  
[NASA-CASE-XLA-00203] c 14 N70-34161  
Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c 71 N74-21014  
Optical signature generating and correlating apparatus  
[NASA-CASE-NPO-15226-1] c 74 N81-19899
- PAYLOAD RETRIEVAL (STS)**  
Simulator method and apparatus for practicing the mating of an observer-controlled object with a target  
[NASA-CASE-MFS-23052-2] c 74 N79-13855  
Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N81-24164
- PAYLOADS**  
Foam generator Patent  
[NASA-CASE-XLA-00838] c 03 N70-36778  
Spacecraft separation system for spinning vehicles and/or payloads Patent  
[NASA-CASE-XLA-02132] c 31 N71-10582  
Payload/burned-out motor case separation system Patent  
[NASA-CASE-XLA-05369] c 31 N71-15687  
Velocity package Patent  
[NASA-CASE-XLA-01339] c 31 N71-15692  
Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-09881] c 31 N71-16085  
Zero gravity apparatus Patent  
[NASA-CASE-XMF-06515] c 14 N71-23227
- PCM TELEMETRY**  
Variable time constant smoothing circuit Patent  
[NASA-CASE-XGS-01983] c 10 N70-41964  
Data transfer system Patent  
[NASA-CASE-NPO-12107] c 08 N71-27255  
High speed direct binary-to-binary coded decimal converter  
[NASA-CASE-KSC-10326] c 08 N72-21197
- PEELING**  
Wire stripper  
[NASA-CASE-FRC-10111-1] c 37 N79-10419
- PELLETS**  
Support structure for irradiated elements Patent  
[NASA-CASE-XNP-06031] c 15 N71-15606
- PELTIER EFFECTS**  
Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146

## PENETRANTS

- Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170
- PENETRATION**  
Method and device for detection of surface discontinuities or defects  
[NASA-CASE-MSC-14187-1] c 35 N74-32879  
Fire extinguishing apparatus having a slidable mass for a penetrator nozzle — for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137
- PENETROMETERS**  
Lunar penetrometer Patent  
[NASA-CASE-XLA-00934] c 14 N71-22765  
Self-recording portable soil penetrometer  
[NASA-CASE-MFS-20774] c 14 N73-19420  
Soil penetrometer  
[NASA-CASE-XNP-05530] c 14 N73-32321  
Penetrometer — for determining load bearing characteristics of inclined surfaces  
[NASA-CASE-NPO-11103-1] c 35 N77-27367  
Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443
- PERCEPTION**  
Method for measuring cutaneous sensory perception  
[NASA-CASE-MSC-13609-1] c 05 N72-25122
- PERFLUORO COMPOUNDS**  
Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c 06 N71-27254  
Perfluoro polyether acyl fluorides  
[NASA-CASE-NPO-10765] c 06 N72-20121  
Reaction of fluonine with polyperfluoropolyethylenes  
[NASA-CASE-NPO-10862] c 06 N72-22107  
Silphenylenesiloxane polymers having in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979] c 06 N72-25151  
Polymers of perfluorobutadiene and method of manufacture  
[NASA-CASE-NPO-10863-2] c 06 N72-25152  
Polyurethane resins from hydroxy terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c 06 N72-27144  
Polymerizable disilanol having in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979-2] c 06 N73-32030  
Perfluoro alkylene dioxy-bis-(4-phthalic anhydrides and oxy-bis-(perfluoroalkyleneoxyphthalic anhydrides  
[NASA-CASE-MFS-22356-1] c 23 N75-30256  
Preparation of perfluorinated imidoylamidoximes — for eventual preparation of heat and chemical resistant polymers  
[NASA-CASE-ARC-11267-1] c 23 N80-26386  
Improved process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N82-26462  
Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353  
High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523
- PERFLUOROALKANE**  
Preparation of heterocyclic block copolymer omega-diamidoximes  
[NASA-CASE-ARC-11060-1] c 27 N79-22300
- PERFORATED PLATES**  
Process for glass coating an ion accelerator grid Patent  
[NASA-CASE-LEW-10278-1] c 15 N71-28582
- PERFORATED SHELLS**  
Method of fabricating an article with cavities — with thin bottom walls  
[NASA-CASE-LAR-10318-1] c 31 N74-18089
- PERFORMANCE PREDICTION**  
Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175
- PERFORMANCE TESTS**  
Frangible electrochemical cell  
[NASA-CASE-XGS-10010] c 03 N72-15986  
Solar cell assembly test method  
[NASA-CASE-NPO-10401] c 03 N72-20033  
Linear explosive comparison  
[NASA-CASE-LAR-10800-1] c 33 N72-27959
- PERIODIC VARIATIONS**  
Mount for continuously orienting a collector dish in a system adapted to perform both diurnal and seasonal solar tracking  
[NASA-CASE-MFS-23267-1] c 35 N77-20401
- PERMEABILITY**  
Ionene membrane separator  
[NASA-CASE-NPO-11091] c 18 N72-22567  
System for detecting substructure microfractures and method therefore  
[NASA-CASE-NPO-14192-1] c 39 N80-10507

- Dialysis system — using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687  
Geological assessment probe  
[NASA-CASE-NPO-14558-1] c 46 N80-24906
- PEROXIDES**  
Method of polymerizing perfluorobutadiene Patent application  
[NASA-CASE-NPO-10447] c 06 N70-11252
- PERSPIRATION**  
Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c 05 N72-25120  
Sweat collection capsule  
[NASA-CASE-ARC-11031-1] c 52 N81-29763
- PETURBATION**  
Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597
- PETURBATION THEORY**  
Dual wavelength scanning Doppler velocimeter — without perturbation of flow fields  
[NASA-CASE-ARC-10637-1] c 35 N75-16783
- PHASE COHERENCE**  
Signal phase estimator  
[NASA-CASE-NPO-11203] c 10 N72-20224  
Coherent receiver employing nonlinear coherence detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c 32 N74-30523
- PHASE CONTROL**  
Rapid sync acquisition system Patent  
[NASA-CASE-NPO-10214] c 10 N71-26577  
Wideband VCO with high phase stability Patent  
[NASA-CASE-XLA-03893] c 10 N71-27271  
Induction motor control system with voltage controlled oscillator circuit  
[NASA-CASE-MFS-21465-1] c 10 N73-32145  
System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c 33 N75-19519  
Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349  
Systems for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N82-11861  
Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 32 N82-33593
- PHASE DEMODULATORS**  
Phase demodulation system with two phase locked loops Patent  
[NASA-CASE-XNP-00777] c 10 N71-19469  
Linear phase demodulator including a phase locked loop with auxiliary feedback loop  
[NASA-CASE-GSC-12018-1] c 33 N77-14334
- PHASE DETECTORS**  
Phase detector assembly Patent  
[NASA-CASE-XMF-00701] c 09 N70-40272  
Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392  
High speed phase detector Patent  
[NASA-CASE-XNP-01306-2] c 09 N71-24596  
Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956  
Low distortion automatic phase control circuit — voltage controlled phase shifter  
[NASA-CASE-MFS-21671-1] c 33 N74-22885  
Correlation type phase detector — with time correlation integrator for frequency multiplexed signals  
[NASA-CASE-GSC-11744-1] c 33 N75-26243  
Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c 35 N75-27331  
Frequency discriminator and phase detector circuit  
[NASA-CASE-NPO-11515-1] c 33 N77-13315  
Phase substitution of spare converter for a failed one of parallel phase staggered converters  
[NASA-CASE-NPO-13812-1] c 33 N77-30365  
Apparatus and method for stabilized phase detection for binary signal tracking loops  
[NASA-CASE-MSC-16461-1] c 33 N79-11313  
Receiving and tracking phase modulated signals  
[NASA-CASE-MSC-16170-2] c 32 N81-16338  
High stability buffered phase comparator  
[NASA-CASE-GSC-12645-1] c 33 N81-31482  
Phase sensitive guidance sensor for wire-following vehicles  
[NASA-CASE-NPO-15341-1] c 33 N82-12346
- PHASE DEVIATION**  
System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c 33 N74-17927
- PHASE LOCK DEMODULATORS**  
Compensating bandwidth switching transients in an amplifier circuit Patent  
[NASA-CASE-XNP-01107] c 10 N71-28859
- PHASE LOCKED SYSTEMS**  
Automatic acquisition system for phase-lock loop  
[NASA-CASE-XGS-04994] c 09 N69-21543



- Phase-locked loop with sideband rejecting properties Patent  
[NASA-CASE-XNP-02723] c 07 N70-41680
- Automatic frequency discriminators and control for a phase-lock loop providing frequency preset capabilities Patent  
[NASA-CASE-XMF-08665] c 10 N71-19467
- Burst synchronization detection system Patent  
[NASA-CASE-XMS-05605-1] c 10 N71-19468
- Phase demodulation system with two phase locked loops Patent  
[NASA-CASE-XNP-00777] c 10 N71-19469
- Diversity receiving system with diversity phase lock Patent  
[NASA-CASE-XGS-01222] c 10 N71-20841
- Phase locked phase modulator including a voltage controlled oscillator Patent  
[NASA-CASE-XNP-05382] c 10 N71-23544
- Video sync processor Patent  
[NASA-CASE-KSC-10002] c 10 N71-25865
- Data-aided carrier tracking loops  
[NASA-CASE-NPO-11282] c 10 N73-16205
- Filter for third order phase locked loops  
[NASA-CASE-NPO-11941-1] c 10 N73-27171
- Receiver with an improved phase lock loop in a multichannel telemetry system with suppressed carrier  
[NASA-CASE-NPO-11593-1] c 07 N73-28012
- Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113
- Phase-locked servo system --- for synchronizing the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c 33 N75-13139
- Low speed phaselock speed control system --- for brushless dc motor  
[NASA-CASE-GSC-11127-1] c 09 N75-24758
- Digital phase-locked loop  
[NASA-CASE-GSC-11623-1] c 33 N75-25040
- Telemetry synchronizer  
[NASA-CASE-GSC-11868-1] c 17 N76-22245
- Frequency translating phase conjugation circuit for active retrodirective antenna array --- microwave transmission  
[NASA-CASE-NPO-14536-1] c 32 N81-14185
- PN lock indicator for dithered PN code tracking loop  
[NASA-CASE-NPO-14435-1] c 33 N81-33405
- Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539
- PHASE MODULATION**
- Phase quadrature-plural channel data transmission system Patent  
[NASA-CASE-XAC-06302] c 08 N71-19763
- Adaptive tracking notch filter system Patent  
[NASA-CASE-XMF-01892] c 10 N71-22986
- Phase locked phase modulator including a voltage controlled oscillator Patent  
[NASA-CASE-XNP-05382] c 10 N71-23544
- Phase multiplying electronic scanning system Patent  
[NASA-CASE-NPO-10302] c 10 N71-26142
- Phase modulator Patent  
[NASA-CASE-MSC-13201-1] c 07 N71-28429
- Two carrier communication system with single transmitter  
[NASA-CASE-NPO-11548] c 07 N73-26118
- Decision feedback loop for tracking a polyphase modulated carrier  
[NASA-CASE-NPO-13103-1] c 32 N74-20811
- Modulator for tone and binary signals --- phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981
- Phase modulating with odd and even finite power series of a modulating signal  
[NASA-CASE-LAR-11607-1] c 32 N77-14292
- Swept group delay measurement  
[NASA-CASE-NPO-13909-1] c 33 N78-25319
- Quadrature demodulation  
[NASA-CASE-GSC-12137-1] c 33 N78-32338
- Closed Loop solar array-on thruster system with power control circuitry  
[NASA-CASE-LEW-12780-1] c 20 N79-20179
- Receiving and tracking phase modulated signals  
[NASA-CASE-MSC-16170-2] c 32 N81-16338
- Baseband signal combiner for large aperture antenna array  
[NASA-CASE-NPO-14641-1] c 32 N81-29308
- Doppler radar having phase modulation of both transmitted and reflected return signals --- rangefinding  
[NASA-CASE-MSC-18675-1] c 32 N81-29312
- Correlation spectrometer having high resolution and multiplexing capability  
[NASA-CASE-NPO-15558-1] c 35 N82-26636
- PHASE SHIFT**
- Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392
- Electromagnetic polarization systems and methods Patent  
[NASA-CASE-GSC-10021-1] c 09 N71-24595
- Method and apparatus for frequency-division multiplex communications by digital phase shift of carrier  
[NASA-CASE-NPO-11338] c 08 N72-25208
- Time domain phase measuring apparatus  
[NASA-CASE-GSC-12228-1] c 33 N79-10338
- Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432
- Control system for an induction motor with energy recovery  
[NASA-CASE-MFS-25477-1] c 33 N82-22437
- PHASE SHIFT CIRCUITS**
- Gyrator type circuit Patent  
[NASA-CASE-XAC-10608-1] c 09 N71-12517
- Phase shift circuit apparatus  
[NASA-CASE-ARC-10269-1] c 10 N72-16172
- Continuously variable voltage controlled phase shifter  
[NASA-CASE-NPO-11129] c 09 N72-33204
- Induction motor control system with voltage controlled oscillator circuit  
[NASA-CASE-MFS-21465-1] c 10 N73-32145
- Low distortion automatic phase control circuit --- voltage controlled phase shifter  
[NASA-CASE-MFS-21671-1] c 33 N74-22885
- Pseudonoise code tracking loop  
[NASA-CASE-MSC-18035-1] c 32 N81-15179
- Fiber optic transmission line stabilization apparatus and method  
[NASA-CASE-NPO-15036-1] c 74 N82-19029
- PHASE SHIFT KEYING**
- Decision feedback loop for tracking a polyphase modulated carrier  
[NASA-CASE-NPO-13103-1] c 32 N74-20811
- Differential phase shift keyed communication system  
[NASA-CASE-MSC-14065-1] c 32 N74-26654
- Differential phase shift keyed signal resolver  
[NASA-CASE-MSC-14066-1] c 33 N74-27705
- Unbalanced quadrature demodulator  
[NASA-CASE-MSC-14840-1] c 32 N77-24331
- Method and apparatus for quadrature-shift-key and linear phase modulation  
[NASA-CASE-NPO-14444-1] c 33 N81-15192
- Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570
- PHASE SWITCHING INTERFEROMETERS**
- Radar antenna system for acquisition and tracking Patent  
[NASA-CASE-XMS-09610] c 07 N71-24625
- PHASE TRANSFORMATIONS**
- Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983
- Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635
- PHASE VELOCITY**
- Ultrasonic calibration device --- for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c 35 N76-15432
- PHASED ARRAYS**
- Phase control circuits using frequency multiplications for phased array antennas  
[NASA-CASE-ERC-10285] c 10 N73-16206
- Phased array antenna control  
[NASA-CASE-MSC-14939-1] c 32 N79-11264
- Phase conjugation method and apparatus for an active retrodirective antenna array  
[NASA-CASE-NPO-13641-1] c 32 N79-24210
- Coaxial phased array antenna  
[NASA-CASE-MSC-16800-1] c 32 N81-14187
- Multiple-beam, high-power, precision pointing antenna system  
[NASA-CASE-NPO-15406-1] c 33 N82-12345
- Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558
- Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 32 N82-33593
- PHASE LOCKED SYSTEMS**
- Transition tracking bit synchronization system  
[NASA-CASE-NPO-10844] c 07 N72-20140
- Digital second-order phase-locked loop  
[NASA-CASE-NPO-11905-1] c 33 N74-12887
- Linear phase demodulator including a phase locked loop with auxiliary feedback loop  
[NASA-CASE-GSC-12018-1] c 33 N77-14334
- PHENANTHRENE**
- Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 28 N82-26481
- PHENOLIC RESINS**
- Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260
- PHENOLS**
- Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029
- Method and device for the detection of phenol and related compounds --- in an electrochemical cell  
[NASA-CASE-LEW-12513-1] c 25 N79-22235
- PHENYLS**
- The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312
- PHONOCARDIOGRAPHY**
- Phonocardiogram simulator Patent  
[NASA-CASE-KKS-10804] c 05 N71-24606
- Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234
- PHOSPHATES**
- Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047
- PHOSPHAZENE**
- Process for the preparation of polycarbonylphosphazenes --- thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271
- Carboranylclotriphosphazenes and their polymers --- thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389
- PHOSPHINES**
- Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-1] c 27 N78-32256
- Compound oxidized styrylphosphine --- flame resistant vinyl polymers  
[NASA-CASE-MSC-14903-2] c 27 N80-10358
- Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-3] c 27 N80-24438
- Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N81-31364
- PHOSPHONITRILES**
- Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363
- PHOSPHORS**
- High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206
- PHOSPHORUS COMPOUNDS**
- Phosphorus-containing bisimide resins  
[NASA-CASE-ARC-11321-1] c 27 N81-27272
- PHOSPHORUS POLYMERS**
- Process for the preparation of polycarbonylphosphazenes --- thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271
- Carboranylclotriphosphazenes and their polymers --- thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389
- PHOTOABSORPTION**
- Photomechanical transducer  
[NASA-CASE-NPO-14363-1] c 39 N81-25400
- PHOTOCATHODES**
- Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04161] c 14 N71-15599
- III-V photocathode with nitrogen doping for increased quantum efficiency  
[NASA-CASE-NPO-12134-1] c 33 N76-31409
- PHOTOCHEMICAL REACTIONS**
- Apparatus for photon excited catalysis  
[NASA-CASE-NPO-13566-1] c 25 N77-32255
- Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148
- Vitro-violet process for producing flame resistant polyamides and products produced thereby --- protective clothing for high oxygen environments  
[NASA-CASE-MSC-16074-1] c 27 N80-26446
- PHOTOCONDUCTIVE CELLS**
- Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-1] c 60 N77-14751
- Plural output optometric sample cell and analysis system  
[NASA-CASE-NPO-10233-1] c 74 N78-33913
- Photocapacitive image converter  
[NASA-CASE-LAR-12513-1] c 44 N82-32841
- PHOTOCONDUCTIVITY**
- Photoetching of metal-oxide layers  
[NASA-CASE-ERC-10108] c 06 N72-21094
- PHOTOCONDUCTORS**
- Electronic divider and multiplier using photocells Patent  
[NASA-CASE-XFR-05637] c 09 N71-19480
- High voltage V-groove solar cell  
[NASA-CASE-LEW-13401-2] c 44 N82-24717
- PHOTODIODES**
- Shock isolator for operating a diode laser on a closed-cycle refrigerator  
[NASA-CASE-GSC-12297-1] c 37 N79-28549
- PHOTODISSOCIATION**
- Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148



## PHOTOELECTRIC CELLS

- Sun tracker with rotatable plane-parallel plate and two photocells Patent  
[NASA-CASE-XGS-01159] c 21 N71-10678
- Method of and device for determining the characteristics and flux distribution of micrometeorites --- scanning puncture holes in sheet material with photoelectric cell [NASA-CASE-NPO-12127-1] c 91 N74-13130
- Noncontacting method for measuring angular deflection [NASA-CASE-LAR-12178-1] c 74 N80-21138
- Photoelectric detection system --- manufacturing automation [NASA-CASE-MFS-23776-1] c 33 N82-28545
- PHOTOELECTRIC EFFECT**  
Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04161] c 14 N71-15599
- PHOTOELECTRIC EMISSION**  
High resolution threshold photoelectron spectroscopy by electron attachment  
[NASA-CASE-NPO-14078-1] c 72 N80-14877
- PHOTOELECTRIC MATERIALS**  
Light radiation direction indicator with a baffle of two parallel grids  
[NASA-CASE-XNP-03930] c 14 N69-24331
- Use of thin film light detector  
[NASA-CASE-NPO-11432-2] c 35 N74-15090
- PHOTOELECTROCHEMICAL DEVICES**  
Method for determining the point of zero zeta potential of semiconductor materials  
[NASA-CASE-LAR-12893-1] c 33 N82-26573
- PHOTOELECTRON SPECTROSCOPY**  
Photoelectron spectrometer with means for stabilizing sample surface potential  
[NASA-CASE-NPO-13772-1] c 35 N78-10429
- High resolution threshold photoelectron spectroscopy by electron attachment  
[NASA-CASE-NPO-14078-1] c 72 N80-14877
- Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659
- PHOTOGRAPHIC EMULSIONS**  
Method for applying photographic resists to otherwise incompatible substrates  
[NASA-CASE-MSC-18107-1] c 27 N81-25209
- Method for retarding dye fading during archival storage of developed color photographic film --- inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432
- PHOTOGRAPHIC EQUIPMENT**  
Apparatus and method for protecting a photographic device Patent  
[NASA-CASE-NPO-10174] c 14 N71-18465
- Method of treating the surface of a glass member  
[NASA-CASE-GSC-12110-1] c 27 N77-32308
- System for forming a quadrified image comprising angularly related fields of view of a three dimensional object  
[NASA-CASE-NPO-14219-1] c 74 N81-17886
- PHOTOGRAPHIC FILM**  
Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10686] c 14 N71-28935
- Exposure interlock for oscilloscope cameras  
[NASA-CASE-LAR-10319-1] c 14 N73-32322
- Optical noise suppression device and method --- laser light exposing film  
[NASA-CASE-MSC-12640-1] c 74 N76-31998
- Selective image area control of X-ray film exposure density  
[NASA-CASE-NPO-13808-1] c 35 N78-15461
- Method for retarding dye fading during archival storage of developed color photographic film --- inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432
- PHOTOGRAPHIC MEASUREMENT**  
Means and method of measuring viscoelastic strain Patent  
[NASA-CASE-XNP-01153] c 32 N71-17645
- Impact measuring technique  
[NASA-CASE-LAR-10913] c 14 N72-16282
- TV fatigue crack monitoring system  
[NASA-CASE-LAR-11490-1] c 39 N78-16387
- PHOTOGRAPHIC PROCESSING**  
Method and apparatus for producing an image from a transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932
- Method of obtaining intensified image from developed photographic films and plates  
[NASA-CASE-MFS-23461-1] c 35 N79-10389
- PHOTOGRAPHIC PROCESSING EQUIPMENT**  
Drying apparatus for photographic sheet material  
[NASA-CASE-GSC-11074-1] c 14 N73-28489
- PHOTOGRAPHIC RECORDING**  
Method of obtaining permanent record of surface flow phenomena Patent  
[NASA-CASE-XLA-01353] c 14 N70-41366

- Focused image holography with extended sources Patent  
[NASA-CASE-ERC-10019] c 16 N71-15551
- Recording and reconstructing focused image holograms Patent  
[NASA-CASE-ERC-10017] c 16 N71-15567
- Method and means for recording and reconstructing holograms without use of a reference beam Patent  
[NASA-CASE-ERC-10020] c 16 N71-26154
- Multiple image storing system for high speed projectile holography  
[NASA-CASE-MFS-20596] c 14 N72-17324
- Phototropic composition of matter  
[NASA-CASE-XGS-03736] c 14 N72-22443
- Method for determining thermo-physical properties of specimens --- photographic recording of changes in thin film phase-change temperature indicating material in wind tunnel  
[NASA-CASE-LAR-11053-1] c 25 N74-18551
- PHOTOGRAPHY**  
System for forming a quadrified image comprising angularly related fields of view of a three dimensional object  
[NASA-CASE-NPO-14219-1] c 74 N81-17886
- PHOTOIONIZATION**  
A multichannel photoionization chamber for absorption analysis Patent  
[NASA-CASE-ERC-10044-1] c 14 N71-27090
- PHOTOLYSIS**  
Solar photolysis of water  
[NASA-CASE-NPO-13675-1] c 44 N77-32580
- Solar photolysis of water  
[NASA-CASE-NPO-14126-1] c 44 N79-11470
- PHOTOMAPPING**  
Window defect planar mapping technique  
[NASA-CASE-MSC-19442-1] c 74 N77-10899
- PHOTOMASKS**  
Method for applying photographic resists to otherwise incompatible substrates  
[NASA-CASE-MSC-18107-1] c 27 N81-25209
- PHOTOMECHANICAL EFFECT**  
Photomechanical transducer  
[NASA-CASE-NPO-14363-1] c 39 N81-25400
- PHOTOMETERS**  
Interferometer direction sensor Patent  
[NASA-CASE-NPO-10320] c 14 N71-17655
- Method and device for determining battery state of charge Patent  
[NASA-CASE-NPO-10194] c 03 N71-20407
- Light position locating system Patent  
[NASA-CASE-XNP-01059] c 23 N71-21821
- Fluid flow meter with comparator reference means Patent  
[NASA-CASE-XGS-01331] c 14 N71-22996
- Two color horizon sensor  
[NASA-CASE-ERC-10174] c 14 N72-25409
- Infrared detectors  
[NASA-CASE-LAR-10728-1] c 14 N73-12445
- Chromato-fluorographic drug detector --- device for detecting and recording fluorescent properties of materials  
[NASA-CASE-ARC-10633-1] c 25 N74-26947
- The 2 deg/90 deg laboratory scattering photometer --- particulate refractivity in hydrosols  
[NASA-CASE-GSC-12088-1] c 74 N78-13874
- Magneto-optic detection system with noise cancellation  
[NASA-CASE-NPO-11954-1] c 35 N78-29421
- PHOTOMICROGRAPHY**  
Stereo photomicrography system  
[NASA-CASE-LAR-10176-1] c 14 N72-20380
- Hand-held photomicroscope  
[NASA-CASE-ARC-10468-1] c 14 N73-33361
- PHOTOMULTIPLIER TUBES**  
Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-03914] c 21 N71-10771
- Electronic divider and multiplier using photocells Patent  
[NASA-CASE-XFR-05637] c 09 N71-19480
- Coincidence apparatus for detecting particles  
[NASA-CASE-XLA-07813] c 14 N72-17328
- Method and apparatus for mapping the sensitivity of the face of a photodetector specifically a PMT  
[NASA-CASE-LAR-10320-1] c 09 N72-23172
- Light direction sensor  
[NASA-CASE-NPO-11201] c 14 N72-27409
- Photomultiplier circuit including means for rapidly reducing the sensitivity thereof --- and protection from radiation damage  
[NASA-CASE-LAR-10593-1] c 33 N74-27682
- PHOTON BEAMS**  
Apparatus for photon excited catalysis  
[NASA-CASE-NPO-13566-1] c 25 N77-32255

## PHOTON-ELECTRON INTERACTION

- Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 72 N82-24953
- PHOTONS**  
Solar cell collector  
[NASA-CASE-LEW-12552-1] c 44 N78-25527
- Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 72 N82-24953
- PHOTOSENSITIVITY**  
Photosensitive device to detect bearing deviation Patent  
[NASA-CASE-XNP-00438] c 21 N70-35089
- Solar optical telescope dome control system Patent  
[NASA-CASE-MSC-10966] c 14 N71-19568
- Method and apparatus for mapping the sensitivity of the face of a photodetector specifically a PMT  
[NASA-CASE-LAR-10320-1] c 09 N72-23172
- Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c 35 N74-26946
- Apparatus for calibrating an image dissector tube  
[NASA-CASE-MFS-22208-1] c 33 N75-26244
- PHOTOTRANSISTORS**  
Phototransistor imaging system  
[NASA-CASE-MFS-20809] c 23 N73-13660
- Phototransistor  
[NASA-CASE-MFS-20407] c 09 N73-19235
- PHOTOTROPISM**  
Phototropic composition of matter  
[NASA-CASE-XGS-03736] c 14 N72-22443
- PHOTOVISCOELASTICITY**  
Means and method of measuring viscoelastic strain Patent  
[NASA-CASE-XNP-01153] c 32 N71-17645
- PHOTOVOLTAIC CELLS**  
Plurality of photosensitive cells on a pyramidal base for planetary trackers  
[NASA-CASE-XNP-04180] c 07 N69-39736
- Light sensitive digital aspect sensor Patent  
[NASA-CASE-XGS-00359] c 14 N70-34158
- Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
[NASA-CASE-NPO-10373] c 03 N71-18698
- Use of thin film light detector  
[NASA-CASE-NPO-11432-2] c 35 N74-15090
- Photovoltaic cell array  
[NASA-CASE-MFS-22458-1] c 44 N77-10635
- Solar cells having integral collector grids  
[NASA-CASE-LEW-12819-1] c 44 N79-11467
- Double-sided solar cell package  
[NASA-CASE-NPO-14199-1] c 44 N79-25482
- Method of construction of a multi-cell solar array  
[NASA-CASE-MFS-23540-1] c 44 N79-26475
- Solar cell with improved N-region contact and method of forming the same  
[NASA-CASE-NPO-14205-1] c 44 N79-31752
- Method of fabricating a photovoltaic module of a substantially transparent construction  
[NASA-CASE-NPO-14303-1] c 44 N80-18550
- Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N81-12388
- Copper doped polycrystalline silicon solar cell  
[NASA-CASE-NPO-14670-1] c 44 N81-19558
- Efficiency of silicon solar cells containing chromium  
[NASA-CASE-NPO-15179-1] c 44 N82-26777
- Process and apparatus for growing a crystal ribbon --- for use in photovoltaic cells  
[NASA-CASE-NPO-15629-1] c 44 N82-26779
- Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709
- High voltage planar multijunction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764
- PHOTOVOLTAIC EFFECT**  
System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616
- Use of thin film light detector  
[NASA-CASE-NPO-11432-2] c 35 N74-15090
- Heat transparent high intensity high efficiency solar cell  
[NASA-CASE-LEW-12892-1] c 44 N81-27598
- PHYSICAL EXERCISE**  
Restraint system for ergometer  
[NASA-CASE-MFS-21046-1] c 14 N73-27377
- Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MFS-21010-1] c 05 N73-30078
- Manual actuator --- for spacecraft exercising machines  
[NASA-CASE-MFS-21481-1] c 37 N74-18127
- Therapeutic hand exerciser  
[NASA-CASE-LAR-11667-1] c 52 N76-19785
- PHYSICAL PROPERTIES**  
Polyurethanes of fluorine containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N73-30099



- System for monitoring physical characteristics of fluids  
— acoustic techniques  
[NASA-CASE-NPO-15400-1] c 34 N81-24384
- PHYSIOLOGICAL EFFECTS**  
Restraint torso for a pressurized suit  
[NASA-CASE-MSC-12397-1] c 05 N72-25119
- PHYSIOLOGICAL TESTS**  
Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234  
Medical subject monitoring systems — multichannel monitoring systems  
[NASA-CASE-MSC-14180-1] c 52 N76-14757
- PHYSIOLOGY**  
Phonocardiograph transducer Patent  
[NASA-CASE-XMS-05365] c 14 N71-22993  
Method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c 51 N76-29891
- PIERCING**  
Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996
- PIEZOELECTRIC CRYSTALS**  
Miniature stress transducer Patent  
[NASA-CASE-XNP-02983] c 14 N71-21091  
Ultra-stable oscillator with complementary transistors  
[NASA-CASE-GSC-11513-1] c 33 N74-20862  
CDS solid state phase insensitive ultrasonic transducer  
— annealing cadmium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559
- PIEZOELECTRIC TRANSDUCERS**  
Force transducer Patent  
[NASA-CASE-XAC-01101] c 14 N70-41957  
Microbalance including crystal oscillators for measuring contaminants in a gas system Patent  
[NASA-CASE-NPO-10144] c 14 N71-17701  
Phonocardiograph transducer Patent  
[NASA-CASE-XMS-05365] c 14 N71-22993  
Semiconductor transducer device  
[NASA-CASE-ERC-10087-2] c 14 N72-31446  
Length mode piezoelectric ultrasonic transducer for inspection of solid objects  
[NASA-CASE-MSC-19672-1] c 38 N79-14398
- PIEZOELECTRICITY**  
Missile stage separation indicator and stage initiator Patent  
[NASA-CASE-XLA-00791] c 03 N70-39930  
Piezoelectric pump Patent  
[NASA-CASE-XNP-05429] c 26 N71-21824  
Pressure sensitive transducers Patent  
[NASA-CASE-ERC-10087] c 14 N71-27334  
Piezoelectric composite materials  
[NASA-CASE-LEW-12582-1] c 24 N82-31450
- PIEZORESISTIVE TRANSDUCERS**  
Miniature stress transducer Patent  
[NASA-CASE-XNP-02983] c 14 N71-21091  
Transverse piezoresistance and pinch effect electromechanical transducers Patent  
[NASA-CASE-ERC-10088] c 26 N71-25490
- PIGMENTS**  
Stabilized zinc oxide coating compositions Patent  
[NASA-CASE-XMF-07770-2] c 18 N71-26772
- PILOT TRAINING**  
Controlled visibility device for an aircraft Patent  
[NASA-CASE-XFR-04147] c 11 N71-10748  
Kinesthetic control simulator — for pilot training  
[NASA-CASE-LAR-10276-1] c 09 N75-15662
- PILOTS (PERSONNEL)**  
System for indicating direction of intruder aircraft  
[NASA-CASE-ERC-10226-1] c 14 N73-16483
- PINCH EFFECT**  
Toggle mechanism for pinching metal tubes  
[NASA-CASE-GSC-12274-1] c 37 N79-28550
- PINS**  
Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505  
Turbo-machine blade vibration damper Patent  
[NASA-CASE-XLE-00155] c 28 N71-29154  
Safety-type locking pin  
[NASA-CASE-MFS-18495] c 15 N72-11385
- PINTLES**  
Metal valve pintle with encapsulated elastomeric body Patent  
[NASA-CASE-MSC-12116-1] c 15 N71-17648
- PIPE FLOW**  
Flat-plate heat pipe  
[NASA-CASE-GSC-11998-1] c 34 N77-32413
- PIPELINES**  
Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937
- PIPELINING (COMPUTERS)**  
A pipelined digital SAR azimuth correlator using hybrid FFT/transversal-filter  
[NASA-CASE-NPO-15519-1] c 32 N82-12298
- PIPES (TUBES)**  
Device for determining the accuracy of the flare on a flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785
- Piping arrangement through a double chamber structure  
[NASA-CASE-XNP-08882] c 15 N69-39935  
Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579  
Thermobulb mount Patent  
[NASA-CASE-NPO-10158] c 33 N71-16356  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114] c 15 N71-17650  
Sealed separable connection Patent  
[NASA-CASE-NPO-10064] c 15 N71-17693  
Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610  
Tube dimpling tool Patent  
[NASA-CASE-XMS-06876] c 15 N71-21536  
Plasma device feed system Patent  
[NASA-CASE-XLE-02902] c 25 N71-21694  
Spin forming tubular elbows Patent  
[NASA-CASE-XMF-01083] c 15 N71-22723  
Portable milling tool Patent  
[NASA-CASE-XMF-03511] c 15 N71-22799  
Internal flare angle gauge Patent  
[NASA-CASE-XMF-04415] c 14 N71-24693  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-3] c 15 N71-24865  
Weld preparation machine Patent  
[NASA-CASE-XKS-07953] c 15 N71-26134  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-2] c 15 N71-26148  
Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191  
Tube fabricating process  
[NASA-CASE-LAR-10203-1] c 15 N72-16330  
Torsional disconnect unit  
[NASA-CASE-NPO-10704] c 15 N72-20445  
Open type urine receptacle  
[NASA-CASE-MSC-12324-1] c 05 N72-22093  
Method for measuring cutaneous sensory perception  
[NASA-CASE-MSC-13609-1] c 05 N72-25122  
Low mass truss structure  
[NASA-CASE-LAR-10546-1] c 11 N72-25287  
Honeycomb panels formed of minimal surface periodic tubule layers  
[NASA-CASE-ERC-10364] c 18 N72-25540  
Honeycomb core structures of minimal surface tubule sections  
[NASA-CASE-ERC-10363] c 18 N72-25541  
Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129  
Cable restraint  
[NASA-CASE-LAR-10129-1] c 15 N73-25512  
Method of fabricating a twisted composite superconductor  
[NASA-CASE-LEW-11015] c 26 N73-32571  
Open tube guideway for high speed air cushioned vehicles  
[NASA-CASE-LAR-10256-1] c 85 N74-34672  
Method for fabricating a mass spectrometer inlet leak  
[NASA-CASE-GSC-12077-1] c 35 N77-24455  
Tubing and cable cutting tool  
[NASA-CASE-LAR-12786-1] c 37 N82-20545  
Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MSC-18430-1] c 37 N82-24491  
Open ended tubing cutters  
[NASA-CASE-MSC-18538-1] c 37 N82-26672
- PISTON ENGINES**  
Stirling cycle engine and refrigeration systems  
[NASA-CASE-NPO-13613-1] c 37 N76-29590  
A gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 37 N81-24445  
Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370  
Solar engine  
[NASA-CASE-LAR-12148-1] c 44 N82-24640
- PISTONS**  
Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042  
Firefly pump-metering system  
[NASA-CASE-GSC-10218-1] c 15 N72-21465  
Collapsible pistons  
[NASA-CASE-MSC-13789-1] c 11 N73-32152  
Airflow control system for supersonic inlets  
[NASA-CASE-LEW-11188-1] c 02 N74-20846  
Centrifugal-reciprocating compressor  
[NASA-CASE-NPO-14597-1] c 37 N79-23431  
Free-piston regenerative hot gas hydraulic engine  
[NASA-CASE-LEW-12274-1] c 37 N80-31790  
Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318  
Multiple plate hydrostatic viscous damper  
[NASA-CASE-LEW-12445-1] c 37 N81-22360
- Stirling cycle cryogenic cooler — magnetically suspended pistons  
[NASA-CASE-GSC-12697-1] c 31 N82-11312
- PITCH (INCLINATION)**  
Reverse pitch fan with divided splitter  
[NASA-CASE-LEW-12760-1] c 07 N77-17059  
Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106  
Pitch attitude stabilization system utilizing engine pressure ratio feedback signals  
[NASA-CASE-LAR-12562-1] c 08 N81-26152
- PIVOTS**  
Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878  
Unidirectional flexural pivot  
[NASA-CASE-GSC-12622-1] c 37 N81-22359
- PLANAR STRUCTURES**  
Window defect planar mapping technique  
[NASA-CASE-MSC-19442-1] c 74 N77-10899  
Method and apparatus for preparing multiconductor cable with flat conductors  
[NASA-CASE-MFS-10946-1] c 31 N79-21226  
High voltage planar multijunction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764
- PLANE WAVES**  
Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130
- PLANETARY ATMOSPHERES**  
Method of planetary atmospheric investigation using a split-trajectory dual flyby mode Patent  
[NASA-CASE-XAC-08494] c 30 N71-15990  
Flow field simulation Patent  
[NASA-CASE-LAR-11138] c 12 N71-20436  
Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991
- PLANETARY GRAVITATION**  
Impact simulator Patent  
[NASA-CASE-XLA-00493] c 11 N70-34786  
Means for visually indicating flight paths of vehicles between the Earth, Venus, and Mercury Patent  
[NASA-CASE-NPO-00708] c 14 N70-35394
- PLANETARY LANDING**  
Parachute glider Patent  
[NASA-CASE-XLA-00898] c 02 N70-36804  
Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-00881] c 31 N71-16085
- PLANETARY ORBITS**  
Flexible foam erectable space structures Patent  
[NASA-CASE-XLA-00686] c 31 N70-34135  
Erectable modular space station Patent  
[NASA-CASE-XLA-00678] c 31 N70-34296
- PLANETARY RADIATION**  
Attitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880
- PLANETARY SURFACES**  
Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118
- PLANT ROOTS**  
Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10-1] c 25 N82-25335
- PLANTS (BOTANY)**  
Rotary plant growth accelerating apparatus — weightlessness  
[NASA-CASE-ARC-10722-1] c 51 N75-25503  
Molten salt pyrolysis of latex — synthetic hydrocarbon fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261  
Enhancement of in vitro Guayule propagation  
[NASA-CASE-NPO-15213-1] c 51 N81-29728
- PLASMA ACCELERATION**  
Apparatus for increasing ion engine beam density Patent  
[NASA-CASE-XLE-00519] c 28 N70-41576  
Coaxial high density, hypervelocity plasma generator and accelerator with ionizable metal disc  
[NASA-CASE-MFS-20589] c 25 N72-32688
- PLASMA ACCELERATORS**  
Plasma accelerator Patent  
[NASA-CASE-XLA-00675] c 25 N70-33267  
Continuously operating induction plasma accelerator Patent  
[NASA-CASE-XLA-01354] c 25 N70-36946  
Crossed-field MHD plasma generator/ accelerator Patent  
[NASA-CASE-XLA-03374] c 25 N71-15562  
Self-repeating plasma generator having communicating annular and linear arc discharge passages Patent  
[NASA-CASE-XLA-03103] c 25 N71-21693  
Magnetically controlled plasma accelerator Patent  
[NASA-CASE-XLA-00327] c 25 N71-29184  
Two stage light gas-plasma projectile accelerator  
[NASA-CASE-MFS-22287-1] c 75 N76-14931



## PLASMA CONTROL

- Superconductive magnetic-field-trapping device  
[NASA-CASE-XNP-01185] c 26 N73-28710  
Self-energized plasma compressor — for compressing plasma discharged from coaxial plasma generator  
[NASA-CASE-MFS-22145-1] c 75 N75-13625

## PLASMA CYLINDERS

- Plasma fluidic hybrid display Patent  
[NASA-CASE-ERC-10100] c 09 N71-33519

## PLASMA DENSITY

- Focussing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618  
Measurement of plasma temperature and density using radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156

## PLASMA DIAGNOSTICS

- Probes having ring and primary sensor at same potential to prevent collection of stray wall currents in ionized gases  
[NASA-CASE-XLE-00690] c 25 N69-39884  
Apparatus for measuring conductivity and velocity of plasma utilizing a plurality of sensing coils positioned in the plasma Patent  
[NASA-CASE-XAC-05695] c 25 N71-16073  
Measurement of plasma temperature and density using radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156

## PLASMA DYNAMICS

- Apparatus for measuring conductivity and velocity of plasma utilizing a plurality of sensing coils positioned in the plasma Patent  
[NASA-CASE-XAC-05695] c 25 N71-16073  
Self-energized plasma compressor — for compressing plasma discharged from coaxial plasma generator  
[NASA-CASE-MFS-22145-1] c 75 N75-13625

## PLASMA ENGINES

- Plasma device feed system Patent  
[NASA-CASE-XLE-02902] c 25 N71-21694

## PLASMA GENERATORS

- Method and apparatus for producing a plasma Patent  
[NASA-CASE-XLA-00147] c 25 N70-34661  
Crossed-field MHD plasma generator/accelerator Patent  
[NASA-CASE-XLA-03374] c 25 N71-15562  
Coaxial high density, hypervelocity plasma generator and accelerator with ionizable metal disc  
[NASA-CASE-MFS-20589] c 25 N72-32688  
Self-energized plasma compressor — for compressing plasma discharged from coaxial plasma generator  
[NASA-CASE-MFS-22145-1] c 75 N75-13625  
Self-energized plasma compressor  
[NASA-CASE-MFS-22145-2] c 75 N76-17951  
Continuous plasma laser — method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma  
[NASA-CASE-XNP-04167-3] c 36 N77-19416

## PLASMA GUNS

- Method of making a diffusion bonded refractory coating Patent  
[NASA-CASE-XLE-01604-2] c 15 N71-15610

## PLASMA JETS

- Method of preparing water purification membranes — polymerization of allyl amine as thin films in plasma discharge  
[NASA-CASE-ARC-10643-1] c 25 N75-12087  
Combination automatic-starting electrical plasma torch and gas shutoff valve — for satellite attitude control  
[NASA-CASE-XLE-10717] c 37 N75-29426  
Plasma cleaning device — designed for high vacuum environments  
[NASA-CASE-MFS-22906-1] c 75 N78-27913

## PLASMA LAYERS

- Electrostatic plasma modulator for space vehicle re-entry communication Patent  
[NASA-CASE-XLA-01400] c 07 N70-41331  
Means for communicating through a layer of ionized gases Patent  
[NASA-CASE-XLA-01127] c 07 N70-41372  
Reentry communication by material addition Patent  
[NASA-CASE-XLA-01552] c 07 N71-11284

## PLASMA LOSS

- Improved thermionic energy converters  
[NASA-CASE-LEW-12443-1] c 44 N81-19561

## PLASMA POTENTIALS

- Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c 33 N77-10429

## PLASMA PROBES

- Probes having ring and primary sensor at same potential to prevent collection of stray wall currents in ionized gases  
[NASA-CASE-XLE-00690] c 25 N69-39884  
Small plasma probe Patent  
[NASA-CASE-XLE-02578] c 25 N71-20747

## PLASMA PROPULSION

- Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310

## PLASMA RADIATION

- Means for measuring the electron density gradients of the plasma sheath formed around a space vehicle Patent  
[NASA-CASE-XLA-06232] c 25 N71-20563  
Continuous plasma light source  
[NASA-CASE-XNP-04167-2] c 25 N72-24753

## PLASMA SHEATHS

- Apparatus for measuring electric field strength on the surface of a model vehicle Patent  
[NASA-CASE-XLE-02038] c 09 N71-16086  
Means for measuring the electron density gradients of the plasma sheath formed around a space vehicle Patent  
[NASA-CASE-XLA-06232] c 25 N71-20563

## PLASMA SPRAYING

- Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00302] c 15 N71-16077  
Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26674  
Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453

## PLASMA TEMPERATURE

- Measurement of plasma temperature and density using radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156

## PLASMA-ELECTROMAGNETIC INTERACTION

- Plasma igniter for internal combustion engine  
[NASA-CASE-NPO-13828-1] c 37 N79-11405

## PLASMAS (PHYSICS)

- Apparatus for measuring conductivity and velocity of plasma utilizing a plurality of sensing coils positioned in the plasma Patent  
[NASA-CASE-XAC-05695] c 25 N71-16073

## PLASTIC COATINGS

- Coating process  
[NASA-CASE-XNP-06508] c 18 N69-39895  
Apparatus and method for skin packaging articles  
[NASA-CASE-MFS-20855] c 15 N73-27405  
Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c 44 N77-14580  
Oxygen post-treatment of plastic surface coated with plasma polymerized silicon-containing monomers  
[NASA-CASE-ARC-10915-2] c 27 N79-18052  
Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708

## PLASTIC DEFORMATION

- Light intensity strain analysis  
[NASA-CASE-LAR-10765-1] c 32 N73-20740

## PLASTIC TAPES

- Thermocouple tape  
[NASA-CASE-LEW-11072-1] c 14 N73-24472

## PLASTICIZERS

- Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530  
Tackifier for addition polyimides containing monoethylphthalate  
[NASA-CASE-LAR-12642-1] c 27 N81-29229  
Method of bonding plasticized elastomer to metal and articles produced thereby  
[NASA-CASE-MFS-25181-1] c 27 N82-24340  
Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708

## PLASTICS

- Method for forming plastic materials Patent  
[NASA-CASE-XMS-05516] c 15 N71-17803  
Method of making inflatable honeycomb Patent  
[NASA-CASE-XLA-03492] c 15 N71-22713  
Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022  
Dielectric molding apparatus Patent  
[NASA-CASE-LAR-10121-1] c 15 N71-26721  
Radar calibration sphere  
[NASA-CASE-XLA-11154] c 07 N72-21117  
Molding apparatus — for thermosetting plastic compositions  
[NASA-CASE-LAR-10489-2] c 31 N74-32920  
Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N76-32315

## PLATENS

- Compression test fixture  
[NASA-CASE-MSC-18723-1] c 39 N81-24470

## PLATES (STRUCTURAL MEMBERS)

- Foil seal  
[NASA-CASE-XLE-05130] c 15 N69-21362  
Fifth wheel  
[NASA-CASE-FRC-10081-1] c 37 N77-14477  
Microwave dichroic plate  
[NASA-CASE-GSC-12171-1] c 33 N79-28416

- Floating nut retention system  
[NASA-CASE-MSC-16938-1] c 37 N80-23653

## PLATING

- Selective plating of etched circuits without removing previous plating Patent  
[NASA-CASE-XGS-03120] c 15 N71-24047  
Peen plating  
[NASA-CASE-GSC-11163-1] c 15 N73-32360  
Scanning nozzle plating system — for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c 31 N74-23065

## PLATINUM

- Electrolytic cell structure  
[NASA-CASE-LAR-11042-1] c 33 N75-27252  
Platinum resistance thermometer circuit  
[NASA-CASE-MSC-12327-1] c 35 N77-27368

## PLAYBACKS

- Method of and means for testing a tape record/playback system  
[NASA-CASE-MFS-22671-2] c 35 N77-17426  
Thermomagnetic recording and magnetic-optic playback system  
[NASA-CASE-NPO-10872-1] c 35 N79-16246

## PLENUM CHAMBERS

- Air cushion lift pad Patent  
[NASA-CASE-MFS-14685] c 31 N71-15689  
Gas filter mounting structure  
[NASA-CASE-MSC-12297] c 14 N72-23457  
Micro-fluid exchange coupling apparatus  
[NASA-CASE-ARC-11114-1] c 51 N81-14605

## PLETHYSMOGRAPHY

- Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525  
Apparatus for determining changes in limb volume  
[NASA-CASE-MSC-18759-1] c 52 N81-24716

## PLOTTERS

- Automated equipotential plotter  
[NASA-CASE-NPO-11134] c 09 N72-21246  
Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341

## PLOTING

- Instrument for measuring potentials on two dimensional electric field plots Patent  
[NASA-CASE-XLA-08493] c 10 N71-19421

## PLUG NOZZLES

- Cascade plug nozzle — for jet noise reduction  
[NASA-CASE-LAR-11674-1] c 07 N76-18117  
Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 34 N82-20465

## PLUGS

- Rocket chamber leak test fixture  
[NASA-CASE-XFR-09479] c 14 N69-27503  
Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505  
Gas regulator Patent  
[NASA-CASE-NPO-10298] c 12 N71-17661  
Heated porous plug microthruster  
[NASA-CASE-GSC-10640-1] c 28 N72-18766  
High temperature penetrator assembly with bayonet plug and ramp-activated lock  
[NASA-CASE-MSC-18526-1] c 37 N82-24494

## PNEUMATIC CONTROL

- Pneumatic system for controlling and actuating pneumatic cyclic devices  
[NASA-CASE-XMS-04843] c 03 N69-21469  
Pneumatic mirror support system  
[NASA-CASE-XLA-03271] c 11 N69-24321  
Valve actuator Patent  
[NASA-CASE-XHQ-01208] c 15 N70-35409  
Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975  
Foot pedal operated fluid type exercising device  
[NASA-CASE-MSC-11561-1] c 05 N73-32014  
Pneumatic load compensating or controlling system  
[NASA-CASE-ARC-10907-1] c 37 N75-32465

## PNEUMATIC EQUIPMENT

- High pressure air valve Patent  
[NASA-CASE-MSC-11010] c 15 N71-19485  
Inflatable support structure Patent  
[NASA-CASE-XLA-01731] c 32 N71-21045  
Apparatus for purging systems handling toxic, corrosive, noxious and other fluids Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089  
Zero gravity apparatus Patent  
[NASA-CASE-XMF-06515] c 14 N71-23227  
Pneumatic amplifier Patent  
[NASA-CASE-MSC-12121-1] c 15 N71-27147  
Life raft stabilizer  
[NASA-CASE-MSC-12393-1] c 02 N73-26006  
Arlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136  
Pneumatic load compensating or controlling system  
[NASA-CASE-ARC-10907-1] c 37 N75-32465



Improved tire/wheel concept — pneumatic aircraft tire  
[NASA-CASE-LAR-11695-2] c 37 N80-18402

System for moving a probe to follow movements of tissue  
[NASA-CASE-NPO-15197-1] c 52 N81-26697

Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N82-24473

**POINT SOURCES**

Electronic background suppression method and apparatus for a field scanning sensor  
[NASA-CASE-XGS-05211] c 07 N69-39980

X-ray reflection collimator adapted to focus X-radiation directly on a detector Patent  
[NASA-CASE-XHQ-04106] c 14 N70-40240

Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341

**POINTING CONTROL SYSTEMS**

Rotable accurate reflector system for telescopes Patent  
[NASA-CASE-NPO-10468] c 23 N71-33229

All sky pointing attitude control system  
[NASA-CASE-ARC-10716-1] c 35 N77-20399

Magnetic suspension and pointing system  
[NASA-CASE-LAR-11889-2] c 37 N78-27424

Magnetic suspension and pointing system — on a carrier vehicle  
[NASA-CASE-LAR-11889-1] c 35 N79-26372

Solar tracking system  
[NASA-CASE-MFS-23999-1] c 44 N81-24520

**POLAR ORBITS**

Cartwheel satellite synchronization system Patent  
[NASA-CASE-XGS-05579] c 31 N71-15676

**POLARIMETERS**

Polarimeter for transient measurement Patent  
[NASA-CASE-XNP-08883] c 23 N71-16101

Interferometer-polarimeter  
[NASA-CASE-NPO-11239] c 14 N73-12446

**POLARITY**

Positive dc to negative dc converter Patent  
[NASA-CASE-XMF-08217] c 03 N71-23239

Peak polarity selector Patent  
[NASA-CASE-FRC-10010] c 10 N71-24862

Precision rectifier with FET switching means Patent  
[NASA-CASE-ARC-10101-1] c 09 N71-33109

**POLARIZATION (WAVES)**

System for interference signal nulling by polarization adjustment  
[NASA-CASE-NPO-13140-1] c 32 N75-24982

Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278

Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381

**POLARIZED ELECTROMAGNETIC RADIATION**

Antenna beam-shaping apparatus Patent  
[NASA-CASE-XNP-00611] c 09 N70-35219

Parabolic reflector horn feed with spillover correction Patent  
[NASA-CASE-XNP-00540] c 09 N70-35382

Antenna feed system for receiving circular polarization and transmitting linear polarization  
[NASA-CASE-NPO-14362-1] c 32 N80-16261

Cosine phased array antenna  
[NASA-CASE-MSC-16800-1] c 32 N81-14187

**POLARIZED LIGHT**

Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c 74 N78-30053

Visible and infrared polarization ratio spectrophotometer  
[NASA-CASE-LAR-12285-1] c 35 N80-28687

Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716

**POLARIZED RADIATION**

Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 48 N82-12685

**POLARIZERS**

Partial polarizer filter  
[NASA-CASE-GSC-12225-1] c 74 N79-14891

**POLISHING**

Conforming polisher for aspheric surface of revolution Patent  
[NASA-CASE-XGS-02884] c 15 N71-22705

Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149

**POLLUTION CONTROL**

System for minimizing internal combustion engine pollution emission  
[NASA-CASE-NPO-13402-1] c 37 N76-18457

Combustion engine — for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497

Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 25 N81-19245

Supercritical fuel injection system  
[NASA-CASE-LEW-12990-1] c 07 N81-29129

**POLLUTION MONITORING**

Fluorescence detector for monitoring atmospheric pollutants  
[NASA-CASE-NPO-13231-1] c 45 N75-27585

Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17656

Indicator providing continuous indication of the presence of a specific pollutant in air  
[NASA-CASE-NPO-13474-1] c 45 N76-21742

Method for detecting pollutants — through chemical reactions and heat treatment  
[NASA-CASE-LAR-11405-1] c 45 N76-31714

Automated syringe sampler — remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407

**POLYAMIDE RESINS**

Vitro-violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments  
[NASA-CASE-MSC-16074-1] c 27 N80-26446

Thermoset-thermoplastic aromatic polyamides  
[NASA-CASE-LAR-12723-1] c 27 N81-15107

Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-1] c 54 N82-32985

Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-2] c 54 N82-32986

**POLYBENZIMIDAZOLE**

Polymeric foams from cross-linkable poly-n-arylenebenzimidazoles  
[NASA-CASE-ARC-11008-1] c 27 N78-31232

**POLYBUTADIENE**

New polymers of perfluorobutadiene and method of manufacture Patent application  
[NASA-CASE-NPO-10863] c 06 N70-11251

Method of polymerizing perfluorobutadiene Patent application  
[NASA-CASE-NPO-10447] c 06 N70-11252

Inhibited solid propellant composition containing beryllium hydride  
[NASA-CASE-NPO-10866-1] c 28 N79-14228

**POLYCARBONATES**

Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190

**POLYCRYSTALS**

Fabrication of polycrystalline solar cells on low-cost substrates  
[NASA-CASE-GSC-12022-1] c 44 N76-28635

Process for utilizing low-cost graphite substrates for polycrystalline solar cells  
[NASA-CASE-GSC-12022-2] c 44 N78-24609

Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910

**POLYESTERS**

Novel polycarboxylic prepolymeric materials and polymers thereof Patent  
[NASA-CASE-NPO-10596] c 06 N71-25929

Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32917

**POLYETHER RESINS**

Polyurethanes from fluoroalkyl propyleneglycol polyethers  
[NASA-CASE-MFS-10506] c 06 N73-30100

Fluorohydroxy ethers  
[NASA-CASE-MFS-10507] c 06 N73-30101

Highly fluorinated polymers  
[NASA-CASE-MFS-11492] c 06 N73-30102

Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370

**POLYIMIDE RESINS**

Polyimide adhesives  
[NASA-CASE-LAR-11397-1] c 27 N75-29263

Polyimide adhesives  
[NASA-CASE-LAR-12181-1] c 27 N78-17205

Low density bismaleimide-carbon microballoon composites — aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184

Mixed diamines for lower melting addition polyimide preparation and utilization  
[NASA-CASE-LAR-12054-1] c 27 N79-33316

Process for preparing high temperature polyimide film laminates  
[NASA-CASE-LAR-12742-1] c 24 N81-12174

Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-19296

Tackifier for addition polyimides containing monoethylphthalate  
[NASA-CASE-LAR-12642-1] c 27 N81-29229

**POLYIMIDES**

Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids  
[NASA-CASE-LEW-11325-1] c 06 N73-27980

Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812

Reinforced structural plastics  
[NASA-CASE-LEW-10199-1] c 27 N74-23125

Polyimides of ether-linked aryl tetracarboxylic dianhydrides  
[NASA-CASE-MFS-22355-1] c 23 N76-15268

Process for preparing thermoplastic aromatic polyimides  
[NASA-CASE-LAR-11828-1] c 27 N78-32261

Ambient cure polyimide foams — thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215

Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides — flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116

Crystalline polyimides — reinforcing fibers for high temperature composites and adhesives as well as flame retardation  
[NASA-CASE-LAR-12099-1] c 27 N80-16158

Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-1] c 27 N80-26447

Method for preparing addition type polyimide prepreps  
[NASA-CASE-LAR-12054-2] c 27 N81-14078

Asymmetric polyimide separation membrane and method  
[NASA-CASE-NPO-15431-1] c 25 N81-29178

Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206

Elastomer toughened polyimide adhesives  
[NASA-CASE-LAR-12775-1] c 27 N82-25384

Electrically conductive palladium containing polyimide films  
[NASA-CASE-LAR-12705-1] c 25 N82-26396

**POLYISOBUTYLENE**

Method of forming difunctional polyisobutylene  
[NASA-CASE-NPO-10893] c 27 N73-22710

**POLYMER CHEMISTRY**

Trifunctional alcohol  
[NASA-CASE-NPO-10714] c 06 N69-31244

Synthesis of siloxane-containing epoxy polymers Patent  
[NASA-CASE-MFS-13994-1] c 06 N71-11240

Apparatus for testing polymeric materials Patent  
[NASA-CASE-XNP-09699] c 06 N71-24607

Polyimide adhesives  
[NASA-CASE-LAR-11397-1] c 27 N75-29263

Trimerization of aromatic nitriles  
[NASA-CASE-LEW-12053-1] c 27 N78-15276

Polyimide adhesives  
[NASA-CASE-LAR-12181-1] c 27 N78-17205

Infusible silazane polymer and process for producing same — protective coatings  
[NASA-CASE-XMF-02526-1] c 27 N79-21190

Fluorine-containing polyformals  
[NASA-CASE-XMF-06900-1] c 27 N79-21191

In situ self cross-linking of polyvinyl alcohol battery separators  
[NASA-CASE-LEW-12972-1] c 44 N79-25481

Bifunctional monomers having terminal oxime and cyano or amidine groups  
[NASA-CASE-ARC-11253-3] c 27 N81-24256

In-situ cross linking of polyvinyl alcohol — application to battery separator films  
[NASA-CASE-LEW-13135-2] c 27 N81-24257

Polymeric compositions and their method of manufacture — forming filled polymer systems using cryogenics  
[NASA-CASE-NPO-10424-1] c 27 N81-24258

Process for the preparation of polycarbonarylphosphazenes — thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271

Phosphorus-containing bismide resins  
[NASA-CASE-ARC-11321-1] c 27 N81-27272

Preparation of crosslinked 1,2,4-oxadiazole polymer  
[NASA-CASE-ARC-11253-2] c 27 N82-24338

Improved process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N82-26482

Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353

**POLYMER MATRIX COMPOSITES**

Intumescent-ablator coatings using endothermic fillers  
[NASA-CASE-ARC-11043-1] c 24 N78-27180

**POLYMERIC FILMS**

Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c 14 N71-20461

Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975

Thermoelectric radiometer utilizing polymer film  
[NASA-CASE-ARC-10138-1] c 14 N72-24477

Apparatus and method for skin packaging articles  
[NASA-CASE-MFS-20855] c 15 N73-27405



- Covered silicon solar cells and method of manufacture — with polymers films  
[NASA-CASE-LEW-11065-2] c 44 N76-14600  
Preparation of dielectric coating of variable dielectric constant by plasma polymerization  
[NASA-CASE-ARC-10892-2] c 27 N79-14214  
Reverse osmosis membrane of high urea rejection properties — water purification  
[NASA-CASE-ARC-10980-1] c 27 N80-23452  
Surface finishing  
[NASA-CASE-MS-C-12631-3] c 27 N81-14077  
Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13101-2] c 23 N81-29160  
Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643  
Electrically conductive palladium containing polyimide films  
[NASA-CASE-LAR-12705-1] c 25 N82-26396  
Texturing polymer surfaces by transfer casting — cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440  
Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 27 N82-28444

**POLYMERIZATION**

- New polymers of perfluorobutadiene and method of manufacture Patent application  
[NASA-CASE-NPO-10863] c 06 N70-11251  
Method of polymerizing perfluorobutadiene Patent application  
[NASA-CASE-NPO-10447] c 06 N70-11252  
Process for interfacial polymerization of pyromellitic dianhydride and 1,2,4, 5-tetraamino-benzene Patent  
[NASA-CASE-XLA-03104] c 06 N71-11235  
Imidazopyrrolone/imide copolymers Patent  
[NASA-CASE-XLA-08802] c 06 N71-11238  
Direct synthesis of polymers schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c 06 N71-11239  
Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c 06 N71-11242  
Synthesis of polymers schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243  
Elastomeric silazane polymers and process for preparing the same Patent  
[NASA-CASE-XMF-04133] c 06 N71-20717  
Reaction of fluorine with polyperfluoropolyenes  
[NASA-CASE-NPO-10862] c 06 N72-22107  
Silphenylenesiloxane polymers having in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979] c 06 N72-25151  
Polymers of perfluorobutadiene and method of manufacture  
[NASA-CASE-NPO-10863-2] c 06 N72-25152  
Fluorohydroxy ethers  
[NASA-CASE-MFS-10507] c 06 N73-30101  
Highly fluorinated polymers  
[NASA-CASE-MFS-11492] c 06 N73-30102  
Method of preparing water purification membranes — polymerization of allyl amine as thin films in plasma discharge  
[NASA-CASE-ARC-10643-1] c 25 N75-12087  
Utilization of oxygen difluoride for syntheses of fluoropolymers  
[NASA-CASE-NPO-12061-1] c 27 N76-16228  
Nuclear alkylated pyridine aldehyde polymers and conductive compositions thereof  
[NASA-CASE-NPO-10557] c 27 N78-17214  
Polymeric foams from cross-linkable poly-n-arylenebenzimidazoles  
[NASA-CASE-ARC-11008-2] c 27 N78-31232  
Ambient cure polyimide foams — thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215  
Preparation of heterocyclic block copolymer omega-diamidoximes  
[NASA-CASE-ARC-11060-1] c 27 N79-22300  
Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307  
Mixed diamines for lower melting addition polyimide preparation and utilization  
[NASA-CASE-LAR-12054-1] c 27 N79-33316  
Compound oxidized styrylphosphine — flame resistant vinyl polymers  
[NASA-CASE-MS-C-14903-2] c 27 N80-10358  
Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MS-C-14903-3] c 27 N80-24438  
Perfluoroalkyl polytriazines containing pendent iododifluoromethyl groups  
[NASA-CASE-ARC-11241-1] c 25 N81-14016

- Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104  
Process for the preparation of fluorine containing crosslinked elastomeric polytriazine and product so produced  
[NASA-CASE-ARC-11248-1] c 27 N81-17259  
The 1,2,4-oxadiazole elastomers — heat resistant polymers  
[NASA-CASE-ARC-11253-1] c 27 N81-17262  
Process for preparation of large-particle-size monodisperse latexes  
[NASA-CASE-MFS-25000-1] c 25 N81-19242  
Ion-exchange hollow fibers  
[NASA-CASE-NPO-13309-1] c 25 N81-19244  
Carboranyl cyclotriphosphazenes and their polymers — thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389  
Electrically conductive palladium containing polyimide films  
[NASA-CASE-LAR-12705-1] c 25 N82-26396  
Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 28 N82-26481

**POLYMERS**

- Preparation of ordered poly /arylenesiloxane/ polymers  
[NASA-CASE-XMF-10753] c 06 N71-11237  
Aromatic diamine-aromatic dialdehyde high molecular weight schiff base polymers prepared in a monofunctional schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740  
Resilience testing device Patent  
[NASA-CASE-XLA-08254] c 14 N71-26161  
Epoxy-aziridine polymer product Patent  
[NASA-CASE-NPO-10701] c 06 N71-28620  
Solid state thermal control polymer coating Patent  
[NASA-CASE-XLA-01745] c 33 N71-28903  
Polymers vehicles as carriers for sulfonic acid salt of nitrosubstituted aromatic amines  
[NASA-CASE-ARC-10325] c 06 N72-25147  
Hydrazinium nitroformate propellant with saturated polymers hydrocarbon binder  
[NASA-CASE-NPO-12015] c 27 N73-16764  
Method of forming difunctional polyisobutylene  
[NASA-CASE-NPO-10893] c 27 N73-22710  
Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029  
Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156  
Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N76-32315  
Oil and fat absorbing polymers  
[NASA-CASE-NPO-11609-2] c 27 N77-31308  
Method for separating biological cells — suspended in aqueous polymer systems  
[NASA-CASE-MFS-23883-1] c 51 N80-16715  
Chelate-modified polymers for atmospheric gas chromatography  
[NASA-CASE-ARC-11154-1] c 25 N80-23383  
Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437  
Preparation of perfluorinated imidoylamidoximes — for eventual preparation of heat and chemical resistant polymers  
[NASA-CASE-ARC-11267-1] c 23 N80-26386

**POLYMETHYL METHACRYLATE**

- Durable antistatic coating for polymethylmethacrylate  
[NASA-CASE-NPO-13867-1] c 27 N78-14164  
Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854

**POLYPHENYLS**

- Polypheylquinoxalines containing pendant phenylethynyl and ethynyl groups — thermoplastic resins  
[NASA-CASE-LAR-12838-1] c 27 N82-26463

**POLYSACCHARIDES**

- Aldehyde-containing urea-absorbing polysaccharides  
[NASA-CASE-NPO-13620-1] c 27 N77-30236

**POLYTETRAFLUOROETHYLENE**

- Method and apparatus for bonding a plastics sleeve onto a metallic body Patent  
[NASA-CASE-XLA-01262] c 15 N71-21404

**POLYURETHANE FOAM**

- Flexible foam erectable space structures Patent  
[NASA-CASE-XLA-00686] c 31 N70-34135  
Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739  
Flexible fire retardant foam  
[NASA-CASE-ARC-10180-1] c 28 N72-20767  
Flexible fire retardant polyisocyanate modified neoprene foam — for thermal protective devices  
[NASA-CASE-ARC-10180-1] c 27 N74-12814

- Fiber modified polyurethane foam for ballistic protection  
[NASA-CASE-ARC-10714-1] c 27 N76-15310  
Mixing insert for foam dispensing apparatus  
[NASA-CASE-MFS-20807-1] c 37 N76-19436  
Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MS-C-18382-2] c 27 N82-24344

**POLYURETHANE RESINS**

- Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c 06 N71-27254  
Polyurethane resins from hydroxy terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c 06 N72-27144  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-2] c 06 N72-27151  
Polyurethanes of fluorine containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N73-30099  
Polyurethanes from fluoroalkyl propyleneglycol polyethers  
[NASA-CASE-MFS-10506] c 06 N73-30100  
Fluorine containing polyurethane  
[NASA-CASE-MFS-10509] c 06 N73-30103  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076  
Flame retardant spandex type polyurethanes  
[NASA-CASE-MS-C-14331-2] c 27 N78-17213

**POLYVINYL ALCOHOL**

- In situ self cross-linking of polyvinyl alcohol battery separators  
[NASA-CASE-LEW-12972-1] c 44 N79-25481  
Method of cross-linking polyvinyl alcohol and other water soluble resins  
[NASA-CASE-LEW-13103-1] c 27 N80-32516  
In-situ cross linking of polyvinyl alcohol — application to battery separator films  
[NASA-CASE-LEW-13135-2] c 27 N81-24257  
Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13504-1] c 27 N81-27279  
Polyvinyl alcohol battery separator containing inert filler — alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615  
Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13101-2] c 23 N81-29160  
Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 44 N81-29531

**PORCELAIN**

- Refractory porcelain enamel passive control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c 27 N75-27160

**POROSITY**

- Process for making sheets with parallel pores of uniform size  
[NASA-CASE-GSC-10984-1] c 37 N75-26371

**POROUS MATERIALS**

- Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468  
Multilayer porous ionizer Patent  
[NASA-CASE-XNP-04338] c 17 N71-23046  
Fluid lubricant system Patent  
[NASA-CASE-XNP-03972] c 15 N71-23048  
Method and device for detecting voids in low density material Patent  
[NASA-CASE-MFS-20044] c 14 N71-28993  
Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c 17 N71-29137  
Compressible biomedical electrode  
[NASA-CASE-MS-C-13648] c 05 N72-27103  
Porous electrode comprising a bonded stack of pieces of corrugated metal foil  
[NASA-CASE-GSC-11368-1] c 09 N73-32108  
Method of making porous conductive supports for electrodes — by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692  
Fluid valve assembly  
[NASA-CASE-MS-C-12731-1] c 37 N78-25426  
Heat exchanger and method of making — bonding rocket chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N79-13289  
Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MS-C-18737-1] c 25 N81-29180  
Method of repairing surface damage to porous refractory substrates — shuttle orbiter tiles  
[NASA-CASE-MS-C-18736-1] c 27 N81-29231  
Castable high temperature refractory materials  
[NASA-CASE-LEW-13080-2] c 27 N82-11210  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540



## POROUS PLATES

- Method of producing porous tungsten ionizers for ion  
rocket engines Patent  
[NASA-CASE-XLE-00455] c 28 N70-38197

## PORPHYRINS

- Method and apparatus for eliminating luminol  
interference material  
[NASA-CASE-MSC-16260-1] c 51 N80-16714

## PORTABLE EQUIPMENT

- Split welding chamber Patent  
[NASA-CASE-LEW-11531] c 15 N71-14932
- Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721
- Weld preparation machine Patent  
[NASA-CASE-XKS-07953] c 15 N71-26134
- Method and apparatus for precision sizing and joining  
of large diameter tubes Patent  
[NASA-CASE-XMF-05114-2] c 15 N71-26148
- Cryogenic cooling system Patent  
[NASA-CASE-NPO-10467] c 23 N71-26654
- Boring bar drive mechanism Patent  
[NASA-CASE-XLA-03661] c 15 N71-33518
- One hand backpack harness  
[NASA-CASE-LAR-10102-1] c 05 N72-23085
- Bacterial contamination monitor  
[NASA-CASE-GSC-10879-1] c 14 N72-25413
- Self-recording portable soil penetrometer  
[NASA-CASE-MFS-20774] c 14 N73-19420
- Hand-held photomicroscope  
[NASA-CASE-ARC-10468-1] c 14 N73-33361
- System for enhancing tool-exchange capabilities of a  
portable wrench  
[NASA-CASE-MFS-22283-1] c 37 N75-33395
- Method of peening and portable peening gun  
[NASA-CASE-MFS-23047-1] c 37 N76-18454
- Portable electrophoresis apparatus using minimum  
electrolyte  
[NASA-CASE-NPO-13274-1] c 25 N79-10163
- Portable heatable container  
[NASA-CASE-NPO-14237-1] c 44 N80-20808
- Portable device for use in starting air-start-units for  
aircraft and having cable lead testing capability  
[NASA-CASE-FRC-10113-1] c 33 N80-26599
- Portable appliance security apparatus  
[NASA-CASE-GSC-12399-1] c 33 N81-25299
- Dual-beam skin friction interferometer --- portable  
equipment  
[NASA-CASE-ARC-11354-1] c 36 N81-29415

## PORTABLE LIFE SUPPORT SYSTEMS

- Portable breathing system --- a breathing apparatus  
using a rebreathing system of heat exchangers for carbon  
dioxide removal  
[NASA-CASE-MSC-16182-1] c 54 N80-10799

## PORTS (OPENINGS)

- Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256
- Safety shield for vacuum/pressure chamber viewing  
port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343

## POSITION (LOCATION)

- Position location system and method Patent  
[NASA-CASE-GSC-10087-2] c 21 N71-13958
- Position location and data collection system and method  
Patent  
[NASA-CASE-GSC-10083-1] c 30 N71-16090
- Emergency escape system Patent  
[NASA-CASE-XKS-07814] c 15 N71-27067
- Position location system and method  
[NASA-CASE-GSC-10087-3] c 07 N72-12080
- Location identification system  
[NASA-CASE-ERC-10324] c 07 N72-25173
- Cosmic dust or other similar outer space particles impact  
location detector  
[NASA-CASE-GSC-11291-1] c 25 N72-33696
- Collimator of multiple plates with axially aligned identical  
random arrays of apertures  
[NASA-CASE-MFS-20546-2] c 14 N73-30389
- Measuring probe position recorder  
[NASA-CASE-LAR-10806-1] c 35 N74-32877
- Vehicle locating system utilizing AM broadcasting station  
cameras  
[NASA-CASE-NPO-13217-1] c 32 N75-26194
- Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c 35 N75-27331
- Aircraft-mounted crash-activated transmitter device  
[NASA-CASE-MFS-16609-3] c 03 N76-32140
- Twin-capacitive shaft angle encoder with analog output  
signal  
[NASA-CASE-ARC-10897-1] c 33 N77-31404
- X-ray position detector  
[NASA-CASE-NPO-12087-1] c 74 N81-19898
- Navigation system and method  
[NASA-CASE-GSC-12508-1] c 04 N81-26085

## POSITION INDICATORS

- Scanning aspect sensor employing an apertured disc  
and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432
- Angular measurement system Patent  
[NASA-CASE-XMF-00447] c 14 N70-33179
- Position sensing device employing misaligned magnetic  
field generating and detecting apparatus Patent  
[NASA-CASE-XGS-07514] c 23 N71-16099
- Angular position and velocity sensing apparatus  
Patent  
[NASA-CASE-XGS-05680] c 14 N71-17585
- Extended area semiconductor radiation detectors and  
a novel readout arrangement Patent  
[NASA-CASE-XGS-03230] c 14 N71-23401
- Doppler compensation by shifting transmitted object  
frequency within limits  
[NASA-CASE-GSC-10087-4] c 07 N73-20174
- Meteoroid impact position locator aid for manned space  
station  
[NASA-CASE-LAR-10629-1] c 35 N75-33367
- Position determination systems --- using orbital antenna  
scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c 17 N76-21250
- Solar cell angular position transducer  
[NASA-CASE-LAR-11999-1] c 44 N80-18552
- POSITIONING**
- Instrument support with precise lateral adjustment  
Patent  
[NASA-CASE-XMF-00480] c 14 N70-39898
- Portable alignment tool Patent  
[NASA-CASE-XMF-01452] c 15 N70-41371
- Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955
- Null device for hand controller Patent  
[NASA-CASE-XLA-01808] c 15 N71-20740
- Rotating raster generator  
[NASA-CASE-FRC-10071-1] c 32 N74-20813
- Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N82-33681

## POSITIONING DEVICES (MACHINERY)

- Swivel support for gas bearings Patent  
[NASA-CASE-XMF-07808] c 15 N71-23812
- Caterpillar micro positioner  
[NASA-CASE-GSC-10780-1] c 14 N72-16283
- Positioning mechanism  
[NASA-CASE-NPO-10679] c 15 N72-21462
- Test stand system for vacuum chambers  
[NASA-CASE-MFS-21362] c 11 N73-20267
- Method and apparatus for optically monitoring the  
angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c 74 N74-21304
- Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014
- Reference apparatus for medical ultrasonic transducer  
[NASA-CASE-ARC-10753-1] c 54 N75-27760
- Controlled caging and uncaging mechanism  
[NASA-CASE-GSC-11063-1] c 37 N77-27400
- Workpiece positioning vise  
[NASA-CASE-GSC-12762-1] c 37 N82-29604

## POSITIVE FEEDBACK

- Complementary regenerative switch Patent  
[NASA-CASE-XGS-02751] c 09 N71-23015

## POTABLE WATER

- Recovery of potable water from human wastes in  
below-G conditions Patent  
[NASA-CASE-XLA-03213] c 05 N71-11207
- Compact solar still Patent  
[NASA-CASE-XMS-04533] c 15 N71-23086
- Specialized halogen generator for purification of water  
Patent  
[NASA-CASE-XLA-08913] c 14 N71-28933
- Potable water dispenser  
[NASA-CASE-MFS-21115-1] c 54 N74-12779
- Metering gun for dispensing precisely measured charges  
of fluid  
[NASA-CASE-MFS-21163-1] c 54 N74-17853
- Iodine generator for reclaimed water purification  
[NASA-CASE-MSC-14632-1] c 54 N78-14784

## POTASSIUM SILICATES

- Fire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c 18 N71-14014

## POTENTIOMETERS

- Angle detector  
[NASA-CASE-ARC-11036-1] c 35 N78-32395

## POTENTIOMETERS (INSTRUMENTS)

- Two-axis controller Patent  
[NASA-CASE-XFR-04104] c 03 N70-42073
- Control device Patent  
[NASA-CASE-XAC-10019] c 15 N71-23809
- Line following servosystem Patent  
[NASA-CASE-XAC-00001] c 15 N71-28952
- Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698

## POTTING COMPOUNDS

- Method and apparatus for shock protection Patent  
[NASA-CASE-XLA-00482] c 15 N70-36409
- Flexible, repairable, pottable material for electrical  
connectors Patent  
[NASA-CASE-XGS-05180] c 18 N71-25881
- Thermally conductive polymers  
[NASA-CASE-GSC-11304-1] c 06 N72-21105

## POWDER (PARTICLES)

- Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 34 N82-24448
- Method for forming pyrrone molding powders and  
products of said method  
[NASA-CASE-LAR-10423-1] c 23 N82-29358

## POWDER METALLURGY

- Process of casting heavy slips Patent  
[NASA-CASE-XLE-00106] c 15 N71-16076
- Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c 17 N71-29137
- Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c 05 N72-25121
- Method for producing dispersion strengthened alloys by  
converting metal to a halide, comminuting, reducing the  
metal halide to the metal and sintering  
[NASA-CASE-LEW-10450-1] c 15 N72-25448
- Method of forming superalloys  
[NASA-CASE-LEW-10805-1] c 15 N73-13465
- Method of heat treating a formed powder product  
material  
[NASA-CASE-LEW-10805-3] c 26 N74-10521
- Method of forming articles of manufacture from  
superalloy powders  
[NASA-CASE-LEW-10805-2] c 37 N74-13179
- Cermet composition and method of fabrication --- heat  
resistant alloys and powders  
[NASA-CASE-NPO-13120-1] c 27 N76-15311

## POWDERED ALUMINUM

- Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206

## POWER AMPLIFIERS

- Ac power amplifier Patent Application  
[NASA-CASE-LAR-10218-1] c 09 N70-34559
- Power supply Patent  
[NASA-CASE-XMS-02159] c 10 N71-22961
- Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c 10 N71-26331
- Signal path series step biased multidevice high efficiency  
amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430
- Isolated output system for a class D switching-mode  
amplifier  
[NASA-CASE-MFS-21616-1] c 33 N75-30429

## POWER CONDITIONING

- Module failure isolation circuit for paralleled inverters  
--- preventing system failure during power conditioning for  
spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254
- Self-reconfiguring solar cell system  
[NASA-CASE-LEW-12586-1] c 44 N80-14472
- Unequal split microwave power divider  
[NASA-CASE-LAR-12889-1] c 33 N81-31483
- Pulsed thyristor trigger control circuit  
[NASA-CASE-MFS-25616-1] c 33 N82-24428
- Solar powered actuator with continuously variable  
auxiliary power control  
[NASA-CASE-MFS-25637-1] c 44 N82-26780

## POWER CONVERTERS

- A gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 37 N81-24445

## POWER EFFICIENCY

- Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317
- Excitation and detection circuitry for a flux responsive  
magnetic head  
[NASA-CASE-XNP-04183] c 09 N69-24329
- Apparatus for increasing ion engine beam density  
Patent  
[NASA-CASE-XLE-00519] c 28 N70-41576
- Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597
- Remote platform power conserving system  
[NASA-CASE-GSC-11182-1] c 15 N75-13007
- A gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 37 N81-24445
- A simplified power factor controller with increased  
energy saving circuit  
[NASA-CASE-MFS-25323-1] c 33 N82-12349
- Family of airfoil shapes for rotating blades --- for  
increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 05 N82-33372

## POWER GAIN

- Serrodyne frequency converter re-entrant amplifier  
system Patent  
[NASA-CASE-XGS-01022] c 07 N71-16088
- CRT blanking and brightness control circuit  
[NASA-CASE-KSC-10647-1] c 10 N72-31273



Multiple-beam, high-power, precision pointing antenna system  
[NASA-CASE-NPO-15406-1] c 33 N82-12345

**POWER LIMITERS**  
Monostable multivibrator  
[NASA-CASE-GSC-10082-1] c 10 N72-20221

**POWER LINES**  
Electrical connector for flat cables Patent  
[NASA-CASE-XMF-00324] c 09 N70-34596  
Motor run-up system — power lines  
[NASA-CASE-NPO-13374-1] c 33 N75-19524  
Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18193  
Shielded conductor cable system  
[NASA-CASE-MSC-12745-1] c 33 N81-27397

**POWER SERIES**  
Computing apparatus Patent  
[NASA-CASE-XGS-04765] c 08 N71-18693  
Phase modulating with odd and even finite power series of a modulating signal  
[NASA-CASE-LAR-11607-1] c 32 N77-14292

**POWER SPECTRA**  
Method and apparatus for high resolution spectral analysis  
[NASA-CASE-NPO-10748] c 08 N72-20177  
An instrument for determining coincidence and elapse time between independent sources of random sequential events  
[NASA-CASE-LAR-12531-1] c 35 N81-31529

**POWER SUPPLIES**  
Tape recorder Patent  
[NASA-CASE-XGS-08259] c 14 N71-23698  
Current dependent filter inductance  
[NASA-CASE-ERC-10139] c 09 N72-17154  
Power supply for carbon dioxide lasers  
[NASA-CASE-GSC-11222-1] c 16 N73-32391  
High voltage distributor  
[NASA-CASE-GSC-11849-1] c 33 N76-16332

**POWER SUPPLY CIRCUITS**  
Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c 03 N69-21330  
Power control circuit  
[NASA-CASE-XNP-02713] c 10 N69-39888  
Electronic amplifier with power supply switching Patent  
[NASA-CASE-XMS-00945] c 09 N71-10798  
Heat pipe thermionic diode power system Patent  
[NASA-CASE-XMF-05843] c 03 N71-11055  
Pulsed energy power system Patent  
[NASA-CASE-MSC-13112] c 03 N71-11057  
Data processor having multiple sections activated at different times by selective power coupling to the sections Patent  
[NASA-CASE-XGS-04767] c 08 N71-12494  
Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486  
Regulated power supply Patent  
[NASA-CASE-XMS-01991] c 09 N71-21449  
Power supply Patent  
[NASA-CASE-XMS-02159] c 10 N71-22961  
Potentiometer sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271  
Power supply circuit Patent  
[NASA-CASE-XMS-00913] c 10 N71-23543  
Drive circuit for minimizing power consumption in inductive load Patent  
[NASA-CASE-NPO-10716] c 09 N71-24892  
Unsaturating saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24893  
Voltage dropout sensor Patent  
[NASA-CASE-KSC-10020] c 10 N71-27338  
Maximum power point tracker Patent  
[NASA-CASE-GSC-10376-1] c 14 N71-27407  
High power microwave power divider Patent  
[NASA-CASE-NPO-11031] c 07 N71-33606  
Ripple indicator  
[NASA-CASE-KSC-10162] c 09 N72-11225  
A dc to ac to dc converter having transistor synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c 09 N72-25253  
LC-oscillator with automatic stabilized amplitude via bias current control — power supply circuit for transducers  
[NASA-CASE-MFS-21698-1] c 33 N74-26732  
Integrable power gyrator — with Z-matrix design using parallel transistors  
[NASA-CASE-MFS-22342-1] c 33 N75-30428  
The dc-to-dc converters employing staggered-phase power switches with two-loop control  
[NASA-CASE-NPO-13512-1] c 33 N77-10428  
Control for nuclear thermionic power source  
[NASA-CASE-NPO-13114-2] c 73 N78-28913  
Closed Loop solar array-ion thruster system with power control circuitry  
[NASA-CASE-LEW-12780-1] c 20 N79-20179

Three phase power factor controller  
[NASA-CASE-MFS-25535-1] c 33 N81-12330  
Power factor control system for ac induction motors  
[NASA-CASE-MFS-23988-1] c 33 N81-27395  
Tnac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N82-26574

**PRECSSION**  
Dynamic precession damper for spin stabilized vehicles Patent  
[NASA-CASE-XLA-01989] c 21 N70-34295

**PRECIPITATION (CHEMISTRY)**  
Production of pure metals  
[NASA-CASE-LEW-10906-1] c 25 N74-30502

**PRECISION**  
Precision stepping drive Patent  
[NASA-CASE-MFS-14772] c 15 N71-17692  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-2] c 15 N71-26148  
Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N81-33449

**PREFLIGHT OPERATIONS**  
Automatic balancing device Patent  
[NASA-CASE-LAR-10774] c 10 N71-13545

**PRELAUNCH TESTS**  
Parasitic probe antenna Patent  
[NASA-CASE-XKS-09348] c 09 N71-13521  
Electronic checkout system for space vehicles Patent  
[NASA-CASE-XKS-08012-2] c 31 N71-15566

**PREPOLYMERS**  
Novel polycarboxylic prepolymer materials and polymers thereof Patent  
[NASA-CASE-NPO-10596] c 06 N71-25929  
Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-1] c 27 N80-26447  
Curable liquid hydrocarbon prepolymers containing hydroxyl groups and process for producing same  
[NASA-CASE-NPO-13137-1] c 27 N80-32514  
Prepolymer dianhydrides  
[NASA-CASE-NPO-13899-1] c 27 N80-32515  
Structural wood panels with improved fire resistance  
[NASA-CASE-ARC-11174-1] c 24 N81-13999  
Elastomer toughened polyimide adhesives  
[NASA-CASE-LAR-12775-1] c 27 N82-25384  
Polyphenylquinoxalines containing pendant phenylethynyl and ethynyl groups — thermoplastic resins  
[NASA-CASE-LAR-12838-1] c 27 N82-26463  
Method for forming pyrrone molding powders and products of said method  
[NASA-CASE-LAR-10423-1] c 23 N82-29358  
High performance filleting sealant  
[NASA-CASE-ARC-11409-1] c 27 N82-32490

**PREPREGS**  
Tackifier for addition polyimides containing monoethylphthalate  
[NASA-CASE-LAR-12642-1] c 27 N81-29229

**PRESSURE**  
Strain gage mounting assembly  
[NASA-CASE-NPO-13170-1] c 35 N76-14430

**PRESSURE CHAMBERS**  
Electric arc driven wind tunnel Patent  
[NASA-CASE-XMF-00411] c 11 N70-36913  
Whole body measurement systems — for weightlessness simulation  
[NASA-CASE-MSC-13972-1] c 52 N74-10975  
Accumulator  
[NASA-CASE-MFS-19287-1] c 34 N77-30399  
Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343

**PRESSURE DISTRIBUTION**  
Instrument for use in performing a controlled Valsalva maneuver Patent  
[NASA-CASE-XMS-01615] c 05 N70-41329  
Prevention of pressure build-up in electrochemical cells Patent  
[NASA-CASE-XGS-01419] c 03 N70-41864  
Accumulator  
[NASA-CASE-MFS-19287-1] c 34 N77-30399  
Thermal barrier pressure seal — shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSC-18134-1] c 37 N81-15363  
Continuous self-locking spiral wound seal — for maintaining pressure between chambers in cryogenic wind tunnels  
[NASA-CASE-LAR-12315-1] c 37 N82-24490

**PRESSURE DROP**  
Leak detector  
[NASA-CASE-MFS-21761-1] c 35 N75-15931

**PRESSURE EFFECTS**  
System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c 33 N74-17927

Evacuated, displacement compression mold — of tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c 31 N75-13111  
Internally supported flexible duct joint — device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c 37 N75-19686  
Fluid pressure balanced seal  
[NASA-CASE-XGS-01286-1] c 37 N79-33469

**PRESSURE GAGES**  
Differential pressure cell Patent  
[NASA-CASE-XAC-00042] c 14 N70-34816  
Blood pressure measuring system for separating and separately recording dc signal and an ac signal Patent  
[NASA-CASE-XMS-06061] c 05 N71-23317  
Apparatus for testing a pressure responsive instrument Patent  
[NASA-CASE-XMF-04134] c 14 N71-23755  
Device for measuring pressure Patent  
[NASA-CASE-XAC-04458] c 14 N71-24232  
Ultrahigh vacuum gauge having two collector electrodes  
[NASA-CASE-LAR-02743] c 14 N73-32324  
Gas ion laser construction for electrically isolating the pressure gauge thereof  
[NASA-CASE-MFS-22597] c 36 N78-17366

**PRESSURE GRADIENTS**  
Positive displacement flowmeter Patent  
[NASA-CASE-XMF-02822] c 14 N70-41994  
Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N81-19440  
Real time pressure signal system for a rotary engine  
[NASA-CASE-LEW-13622-1] c 07 N82-26294

**PRESSURE HEADS**  
Head for high speed spinner having a vacuum chuck — holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482

**PRESSURE MEASUREMENT**  
Inertia diaphragm pressure transducer Patent  
[NASA-CASE-XAC-02981] c 14 N71-21072  
Linear differential pressure sensor Patent  
[NASA-CASE-XMF-01974] c 14 N71-22752  
Device for measuring pressure Patent  
[NASA-CASE-XAC-04458] c 14 N71-24232  
Device for measuring light scattering wherein the measuring beam is successively reflected between a pair of parallel reflectors Patent  
[NASA-CASE-XER-11203] c 14 N71-28994  
Sensing probe  
[NASA-CASE-LEW-10281-1] c 14 N72-17327  
Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c 14 N73-30390  
Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c 14 N73-30394  
Wind tunnel model and method  
[NASA-CASE-LAR-10812-1] c 09 N74-17955  
Indicated mean-effective pressure instrument  
[NASA-CASE-LEW-12661-1] c 35 N79-14345  
High-temperature microphone system — for measuring pressure fluctuations in gases at high temperature  
[NASA-CASE-LAR-12375-1] c 32 N79-24203  
Static pressure orifice system testing method and apparatus  
[NASA-CASE-LAR-12269-1] c 35 N80-18358  
Detection of the transitional layer between laminar and turbulent flow areas on a wing surface — using an accelerometer to measure pressure levels during wind tunnel tests  
[NASA-CASE-LAR-12261-1] c 02 N80-20224  
A self-correcting electronically scanned pressure sensor  
[NASA-CASE-LAR-12686-1] c 09 N81-27121  
Non-invasive method and apparatus for measuring pressure within a pliable vessel  
[NASA-CASE-ARC-11264-1] c 52 N81-33804  
Electronic scanning pressure measuring system and transducer package  
[NASA-CASE-ARC-11361-1] c 35 N82-26635  
Method of an apparatus for measuring temperature and pressure — remote sensing of the atmosphere  
[NASA-CASE-GSC-12558-1] c 35 N82-29580

**PRESSURE REDUCTION**  
Relief valve  
[NASA-CASE-XMS-05894-1] c 15 N69-21924  
Sealed battery gas manifold construction Patent  
[NASA-CASE-XNP-03378] c 03 N71-11051  
Depressurization of arc lamps  
[NASA-CASE-NPO-10790-1] c 33 N77-21316  
Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229  
Pressure letdown method and device for coal conversion systems  
[NASA-CASE-NPO-15100-1] c 28 N81-33306



## PRESSURE REGULATORS

- Pressure regulating system Patent  
[NASA-CASE-XNP-00450] c 15 N70-38603
- Resuscitation apparatus Patent  
[NASA-CASE-XMS-01115] c 05 N70-39922
- High pressure regulator valve Patent  
[NASA-CASE-XNP-00710] c 15 N71-10778
- Space suit pressure stabilizer Patent  
[NASA-CASE-XLA-05332] c 05 N71-11194
- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203
- Anti-backlash circuit for hydraulic drive system Patent  
[NASA-CASE-XNP-01020] c 03 N71-12260
- High impact pressure regulator Patent  
[NASA-CASE-NPO-10175] c 14 N71-18625
- Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332] c 05 N72-20097
- Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332-2] c 05 N73-25125
- Combined pressure regulator and shutoff valve  
[NASA-CASE-NPO-13201-1] c 37 N75-15050
- Pressure modulating valve  
[NASA-CASE-MSC-14905-1] c 37 N77-28487
- Flow compensating pressure regulator  
[NASA-CASE-LEW-12718-1] c 34 N78-25351
- Flow diverter valve and flow diversion method  
[NASA-CASE-HQN-00573-1] c 37 N79-33468
- Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12955-1] c 52 N80-14684
- Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12723-1] c 52 N80-18690
- Pressure control valve --- inflating flexible bladders  
[NASA-CASE-ARC-11251-1] c 37 N81-17433
- Prosthetic urinary sphincter  
[NASA-CASE-MFS-23717-1] c 52 N81-25660
- Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N81-27786

## PRESSURE SENSORS

- Pressure variable capacitor  
[NASA-CASE-XNP-09752] c 14 N69-21541
- Aerodynamic measuring device Patent  
[NASA-CASE-XLA-00481] c 14 N70-36824
- Check valve assembly for a probe Patent  
[NASA-CASE-XLA-00128] c 15 N70-37925
- Dynamic sensor Patent  
[NASA-CASE-XAC-02877] c 14 N70-41681
- Inertia diaphragm pressure transducer Patent  
[NASA-CASE-XAC-02981] c 14 N71-21072
- Linear differential pressure sensor Patent  
[NASA-CASE-XMF-01974] c 14 N71-22752
- Pressure transducer calibrator Patent  
[NASA-CASE-XNP-01660] c 14 N71-23036
- Instrument for measuring the dynamic behavior of liquids  
[NASA-CASE-XLA-05541] c 12 N71-26387
- Pressure sensitive transducers Patent  
[NASA-CASE-ERC-10087] c 14 N71-27334
- Method of making pressurized panel Patent  
[NASA-CASE-XLA-08916] c 15 N71-29018
- Sensing probe  
[NASA-CASE-LEW-10281-1] c 14 N72-17327
- Pressure transducer  
[NASA-CASE-NPO-10832] c 14 N72-21405
- Pressure operated electrical switch responsive to a pressure decrease after a pressure increase  
[NASA-CASE-LAR-10137-1] c 09 N72-22204
- Wide range dynamic pressure sensor  
[NASA-CASE-ARC-10263-1] c 14 N72-22438
- Differential pressure control  
[NASA-CASE-MFS-14216] c 14 N73-13418
- Pressurized panel  
[NASA-CASE-XLA-08916-2] c 14 N73-28487
- System for calibrating pressure transducer  
[NASA-CASE-LAR-10910-1] c 35 N74-13132
- Stagnation pressure probe --- for measuring pressure of supersonic gas streams  
[NASA-CASE-LAR-11139-1] c 35 N74-32878
- Circuit for detecting initial systole and diastolic notch --- for monitoring arterial pressure  
[NASA-CASE-LEW-11581-1] c 54 N75-13531
- Leak detector  
[NASA-CASE-MFS-21761-1] c 35 N75-15931
- Measurement of gas production of microorganisms --- using pressure sensors  
[NASA-CASE-LAR-11326-1] c 35 N75-33368
- Static pressure probe  
[NASA-CASE-LAR-11552-1] c 35 N76-14429
- Tenlectrode capacitive pressure transducer  
[NASA-CASE-ARC-10711-2] c 33 N76-21390
- Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c 52 N76-29896

- Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648-1] c 35 N77-14407
- Pressure transducer --- using a monomeric charge transfer complex sensor  
[NASA-CASE-NPO-11150] c 35 N78-17359
- Electronically scanned pressure sensor module with in situ calibration capability  
[NASA-CASE-LAR-12230-1] c 35 N79-14347
- System for use in conducting wake investigation for a wing in flight --- differential pressure measurements for drag investigations  
[NASA-CASE-FRC-11024-1] c 02 N80-28300
- Tactile sensing system --- manipulator controllers  
[NASA-CASE-NPO-15094-1] c 33 N81-16386
- A self-correcting electronically scanned pressure sensor  
[NASA-CASE-LAR-12686-1] c 09 N81-27121
- Automatic compression adjusting mechanism for internal combustion engines  
[NASA-CASE-MSC-18807-1] c 37 N81-29442
- Non-invasive method and apparatus for measuring pressure within a pliable vessel  
[NASA-CASE-ARC-11264-1] c 52 N81-33804
- Real time pressure signal system for a rotary engine  
[NASA-CASE-LEW-13622-1] c 07 N82-26294
- Electronic scanning pressure measuring system and transducer package  
[NASA-CASE-ARC-11361-1] c 35 N82-26635

## PRESSURE SUITS

- Pressure suit tie-down mechanism Patent  
[NASA-CASE-XMS-00784] c 05 N71-12335
- Pressure garment joint Patent  
[NASA-CASE-XMS-09636] c 05 N71-12344
- Omnidirectional joint Patent  
[NASA-CASE-XMS-09635] c 05 N71-24623
- Foreshortened convolute section for a pressurized suit  
[NASA-CASE-XMS-09637-1] c 05 N71-24730
- Method of forming a root cord restrained convolute section  
[NASA-CASE-MSC-12398] c 05 N72-20098
- Restraint torso for a pressurized suit  
[NASA-CASE-MSC-12397-1] c 05 N72-25119
- Flexible joint for pressurizable garment  
[NASA-CASE-MSC-11072] c 54 N74-32546
- Walking boot assembly  
[NASA-CASE-ARC-11101-1] c 54 N78-17675
- Pressure suit joint analyzer  
[NASA-CASE-ARC-11314-1] c 54 N82-26987

## PRESSURE SWITCHES

- Reinforcing means for diaphragms Patent  
[NASA-CASE-XNP-01962] c 32 N70-41370
- Calibrating pressure switch  
[NASA-CASE-XMF-04494-1] c 33 N79-33392

## PRESSURE VESSELS

- Liquid rocket system Patent  
[NASA-CASE-XNP-00610] c 28 N70-36910
- Thin-walled pressure vessel Patent  
[NASA-CASE-XLE-04677] c 15 N71-10577
- Gas regulator Patent  
[NASA-CASE-NPO-10298] c 12 N71-17661
- Controlled glass bead peening Patent  
[NASA-CASE-XLA-07390] c 15 N71-18616
- Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c 35 N74-15093
- Method and apparatus for nondestructive testing of pressure vessels  
[NASA-CASE-NPO-12142-1] c 38 N76-28563
- Gas compression apparatus  
[NASA-CASE-MSC-14757-1] c 35 N78-10428
- Pressure control valve --- inflating flexible bladders  
[NASA-CASE-ARC-11251-1] c 37 N81-17433
- Method and apparatus for growth of crystals by pressure reduction of supercritical or subcritical solution  
[NASA-CASE-NPO-15772-1] c 76 N82-23031

## PRESSURE WELDING

- Diffusion welding --- heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c 37 N74-21055

## PRESSURIZING

- Restraining mechanism  
[NASA-CASE-MSC-13054] c 54 N78-17677

## PRESTRESSING

- Prestressed refractory structure Patent  
[NASA-CASE-XNP-02888] c 18 N71-21068
- Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MSC-18791-1] c 37 N81-24446
- Method of manufacture of bonded fiber flywheel --- fiberglass-epoxy  
[NASA-CASE-MFS-23674-1] c 24 N81-29163

## PRETREATMENT

- Pretreatment method for anti-wettable materials  
[NASA-CASE-XMS-03537] c 15 N69-21471

- Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MSC-18791-1] c 37 N81-24446

## PRIMERS (COATINGS)

- Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-13359-1] c 27 N81-24265

## PRINTED CIRCUITS

- Electrical feed-through connection for printed circuit boards and printed cable  
[NASA-CASE-XMF-01483] c 14 N69-27431
- Printed cable connector Patent  
[NASA-CASE-XMF-00369] c 09 N70-36494
- Printed circuit board with bellows rivet connection Patent  
[NASA-CASE-XNP-05082] c 15 N70-41960
- Electrical spot terminal assembly Patent  
[NASA-CASE-NPO-10034] c 15 N71-17685
- Method of coating circuit paths on printed circuit boards with solder Patent  
[NASA-CASE-XMF-01599] c 09 N71-20705
- Device for handling printed circuit cards Patent  
[NASA-CASE-MFS-20453] c 15 N71-29133
- Polyimide resin-fiberglass cloth laminates for printed circuit boards  
[NASA-CASE-MFS-20408] c 18 N73-12604
- Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c 10 N73-25243
- Device for configuring multiple leads --- method for connecting electric leads to printed circuit board  
[NASA-CASE-MFS-22133-1] c 33 N74-26977
- Connector --- for connecting circuits on different layers of multilayer printed circuit boards  
[NASA-CASE-LAR-11709-1] c 37 N76-27567
- Controlled caging and uncaging mechanism  
[NASA-CASE-GSC-11063-1] c 37 N77-27400
- Solar array strip and a method for forming the same  
[NASA-CASE-NPO-13652-1] c 44 N79-17314
- Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716

## PRINTING

- Application of semiconductor diffusants to solar cells by screen printing  
[NASA-CASE-LEW-12775-1] c 44 N79-11468

## PRINTOUTS

- Device for handling printed circuit cards Patent  
[NASA-CASE-MFS-20453] c 15 N71-29133

## PRISMS

- Interferometric rotation sensor  
[NASA-CASE-ARC-10278-1] c 14 N73-25463
- Method and apparatus for splitting a beam of energy --- optical communication  
[NASA-CASE-GSC-12083-1] c 73 N78-32848
- Rhomboid prism pair for rotating the plane of parallel light beams --- laser velocimeters  
[NASA-CASE-ARC-11311-1] c 74 N81-16882
- Laser resonator  
[NASA-CASE-GSC-12565-1] c 36 N82-24485

## PROBABILITY THEORY

- System and method for character recognition  
[NASA-CASE-NPO-11337-1] c 74 N81-19896

## PROBES

- Method and apparatus for securing to a spacecraft Patent  
[NASA-CASE-MFS-11133] c 31 N71-16222
- Droplet monitoring probe  
[NASA-CASE-NPO-10985] c 14 N73-20478
- System for moving a probe to follow movements of tissue  
[NASA-CASE-NPO-15197-1] c 52 N81-26697

## PROCESS CONTROL (INDUSTRY)

- Photoelectric detection system --- manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545

## PRODUCT DEVELOPMENT

- Technique of duplicating fragile core  
[NASA-CASE-XLA-07829] c 15 N72-16329
- Tube fabricating process  
[NASA-CASE-LAR-10203-1] c 15 N72-16330
- Process for making diamonds  
[NASA-CASE-MFS-20698-2] c 15 N73-19457
- High power laser apparatus and system  
[NASA-CASE-XLE-2529-2] c 36 N75-27364
- Induced junction solar cell and method of fabrication  
[NASA-CASE-NPO-13786-1] c 44 N80-29835
- Fiber optic crossbar switch for automatically patching optical signals  
[NASA-CASE-KSC-11104-1] c 74 N81-12862
- Process for preparation of large-particle-size monodisperse latexes  
[NASA-CASE-MFS-25000-1] c 25 N81-19242
- Ion-exchange hollow fibers  
[NASA-CASE-NPO-13309-1] c 25 N81-19244
- Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N81-31364



Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MSC-18430-1] c 37 N82-24491

**PRODUCTION ENGINEERING**  
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[NASA-CASE-XMS-02532] c 15 N70-41808  
Method and apparatus for making curved reflectors  
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[NASA-CASE-XLE-08917] c 15 N71-15597  
Method of making self lubricating fluoride-metal  
composite materials Patent  
[NASA-CASE-XLE-08511-2] c 18 N71-16105  
Method of making impurity-type semiconductor electrical  
contacts Patent  
[NASA-CASE-XMF-01016] c 26 N71-17818  
Method of making inflatable honeycomb Patent  
[NASA-CASE-XLA-03492] c 15 N71-22713  
Multilayer porous ionizer Patent  
[NASA-CASE-XNP-04338] c 17 N71-23046  
Ion engine casing construction and method of making  
same Patent  
[NASA-CASE-XNP-06942] c 28 N71-23293  
Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618  
Star tracking reticles  
[NASA-CASE-GSC-11188-1] c 14 N73-32320  
Process for making sheets with parallel pores of uniform  
size  
[NASA-CASE-GSC-10984-1] c 37 N75-26371  
Solar cell collector and method for producing same  
[NASA-CASE-LEW-12552-2] c 44 N79-11472  
Multilevel metallization method for fabricating a metal  
oxide semiconductor device  
[NASA-CASE-MFS-23541-1] c 76 N79-14908  
Solar array strip and a method for forming the same  
[NASA-CASE-NPO-13652-1] c 44 N79-17314  
Method of fabricating a photovoltaic module of a  
substantially transparent construction  
[NASA-CASE-NPO-14303-1] c 44 N80-18550  
Apparatus for use in the production of ribbon-shaped  
crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389  
Method and apparatus for producing concentric hollow  
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[NASA-CASE-NPO-14596-1] c 31 N81-33319  
Apparatus for sequentially transporting containers  
[NASA-CASE-MFS-23846-1] c 37 N82-32731

**PROJECTILES**  
Self-obliterating, gas operated launcher  
[NASA-CASE-NPO-11013] c 11 N72-22247  
Two stage light gas-plasma projectile accelerator  
[NASA-CASE-MFS-22287-1] c 75 N76-14931

**PROJECTION**  
Projection system for display of parallax and  
perspective  
[NASA-CASE-MFS-23194-1] c 35 N78-17357

**PROJECTIVE GEOMETRY**  
Projection system for display of parallax and  
perspective  
[NASA-CASE-MFS-23194-1] c 35 N78-17357

**PROJECTORS**  
Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882  
System and method for obtaining wide screen Schlieren  
photographs  
[NASA-CASE-NPO-14174-1] c 74 N79-20856

**PROPAGATION MODES**  
Dual waveguide mode source having control means for  
adjusting the relative amplitude of two modes Patent  
[NASA-CASE-XNP-03134] c 07 N71-10676

**PROPELLANT ACTUATED INSTRUMENTS**  
Pressure limiting propellant actuating system  
[NASA-CASE-MSC-18179-1] c 20 N80-18097

**PROPELLANT ADDITIVES**  
Inhibited solid propellant composition containing  
beryllium hydride  
[NASA-CASE-NPO-10866-1] c 28 N79-14228

**PROPELLANT BINDERS**  
Method of forming difunctional polyisobutylene  
[NASA-CASE-NPO-10893] c 27 N73-22710  
Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

**PROPELLANT CASTING**  
Casting propellant in rocket engine  
[NASA-CASE-LAR-11995-1] c 28 N77-10213  
Solid propellant rocket motor and method of making  
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[NASA-CASE-XLA-1349] c 20 N77-17143

**PROPELLANT CHEMISTRY**  
Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255

**PROPELLANT COMBUSTION**  
Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c 28 N70-35381  
Control of transverse instability in rocket combustors  
Patent  
[NASA-CASE-XLE-04603] c 33 N71-21507

**PROPELLANT DECOMPOSITION**  
Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504

**PROPELLANT GRAINS**  
Propellant grain for rocket motors Patent  
[NASA-CASE-XGS-03556] c 27 N70-35534

**PROPELLANT TANKS**  
Liquid rocket system Patent  
[NASA-CASE-XNP-00610] c 28 N70-36910  
Slosh suppressing device and method Patent  
[NASA-CASE-XMF-00658] c 12 N70-38997  
Measuring device Patent  
[NASA-CASE-XMS-01546] c 14 N70-40233  
Zero gravity starting means for liquid propellant motors  
Patent  
[NASA-CASE-XNP-01390] c 28 N70-41275  
Tank construction for space vehicles Patent  
[NASA-CASE-XMF-01899] c 31 N70-41948  
Method and apparatus for detection and location of  
microleaks Patent  
[NASA-CASE-XMF-02307] c 14 N71-10779  
Method of making a filament-wound container Patent  
[NASA-CASE-XLE-03803-2] c 15 N71-17651  
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[NASA-CASE-XLA-05749] c 15 N71-19569  
Booster tank system Patent  
[NASA-CASE-MSC-12390] c 27 N71-29155  
Space vehicle system  
[NASA-CASE-MSC-12561-1] c 18 N76-17185  
Passive propellant system  
[NASA-CASE-MFS-23642-2] c 20 N78-27176

**PROPELLANT TRANSFER**  
Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492  
Apparatus for transferring cryogenic liquids Patent  
[NASA-CASE-XLE-00345] c 15 N70-38020  
Method for continuous variation of propellant flow and  
thrust in propulsive devices Patent  
[NASA-CASE-XLE-00177] c 28 N70-40367  
Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635  
Electrostatic ion rocket engine Patent  
[NASA-CASE-XLE-02066] c 28 N71-15661  
Control of transverse instability in rocket combustors  
Patent  
[NASA-CASE-XLE-04603] c 33 N71-21507  
Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023  
Filler valve Patent  
[NASA-CASE-XNP-01747] c 15 N71-23024  
Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781  
Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937  
Passive propellant system  
[NASA-CASE-MFS-23642-2] c 20 N78-27176

**PROPELLER BLADES**  
Propeller blade loading control Patent  
[NASA-CASE-XAC-00139] c 02 N70-34856

**PROPELLERS**  
Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N82-29319

**PROPORTIONAL CONTROL**  
Proportional controller Patent  
[NASA-CASE-XAC-03392] c 03 N70-41954

**PULSION SYSTEM CONFIGURATIONS**  
Electro-thermal rocket Patent  
[NASA-CASE-XLE-00267] c 28 N70-33356  
Propellant grain for rocket motors Patent  
[NASA-CASE-XGS-03556] c 27 N70-35534  
Composite powerplant and shroud therefor Patent  
[NASA-CASE-XLA-01043] c 28 N71-10780  
Annular slit colloid thruster Patent  
[NASA-CASE-GSC-10709-1] c 28 N71-25213  
Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c 27 N71-28929  
Apparatus for endoscopic examination — analysis of  
the propulsion system configuration and transmitter  
[NASA-CASE-NPO-14092-1] c 52 N80-16725

**PULSION SYSTEM PERFORMANCE**  
Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067

**PROSTHETIC DEVICES**  
Tactile sensing means for prosthetic limbs  
[NASA-CASE-MFS-16570-1] c 05 N73-32013  
Orthotic arm joint — for use in mechanical arms  
[NASA-CASE-MFS-21611-1] c 54 N75-12616  
Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735  
Aldehyde-containing urea-absorbing polysaccharides  
[NASA-CASE-NPO-13620-1] c 27 N77-30236  
Rotational joint assembly for the prosthetic leg  
[NASA-CASE-KSC-11004-1] c 54 N77-30749  
Mechanical energy storage device for hip  
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[NASA-CASE-ARC-10916-1] c 52 N78-10686

Method of adhering bone to a rigid substrate using a  
graphite fiber reinforced bone cement  
[NASA-CASE-NPO-13764-1] c 27 N78-17215

Compact artificial hand  
[NASA-CASE-NPO-13906-1] c 54 N79-24652

Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772

Prosthetic urinary sphincter  
[NASA-CASE-MFS-23717-1] c 52 N81-25660

Prosthetic occlusive device for an internal  
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[NASA-CASE-MFS-25640-1] c 52 N82-26962

Texturing polymer surfaces by transfer casting —  
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[NASA-CASE-LEW-13120-1] c 27 N82-28440

**PROTECTION**  
Apparatus and method for protecting a photographic  
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[NASA-CASE-NPO-10174] c 14 N71-18465  
Fiber modified polyurethane foam for ballistic  
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[NASA-CASE-ARC-10714-1] c 27 N76-15310

**PROTECTIVE CLOTHING**  
Process for conditioning tanned sharkskin and articles  
made therefrom Patent  
[NASA-CASE-XMS-09691-1] c 18 N71-15545  
Biological isolation garment Patent  
[NASA-CASE-MSC-12206-1] c 05 N71-17599  
Garments for controlling the temperature of the body  
Patent  
[NASA-CASE-XMS-10269] c 05 N71-24147  
Foreshortened convolute section for a pressurized suit  
Patent  
[NASA-CASE-XMS-09637-1] c 05 N71-24730  
Protective suit having an audio transceiver Patent  
[NASA-CASE-KSC-10164] c 07 N71-33108  
Protective garment ventilation system  
[NASA-CASE-XMS-04928] c 54 N78-17679  
Vitra-violet process for producing flame resistant  
polyamides and products produced thereby — protective  
clothing for high oxygen environments  
[NASA-CASE-MSC-16074-1] c 27 N80-26446

**PROTECTIVE COATINGS**  
Coating process  
[NASA-CASE-XNP-06508] c 18 N69-39895  
Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979  
Process for applying a protective coating for salt bath  
brazing Patent  
[NASA-CASE-XLE-00046] c 15 N70-33311  
Method and apparatus for shock protection Patent  
[NASA-CASE-XLA-00482] c 15 N70-38409  
Thermal control of space vehicles Patent  
[NASA-CASE-XLA-01291] c 33 N70-36617  
Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c 27 N70-41897  
Fire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c 18 N71-14014  
Bacteriostatic conformal coating and methods of  
application Patent  
[NASA-CASE-GSC-10007] c 18 N71-16046  
Method of coating carbonaceous base to prevent  
oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00284] c 15 N71-16075  
Method of coating carbonaceous base to prevent  
oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00302] c 15 N71-16077  
Aerodynamic protection for space flight vehicles  
Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679  
Heat protection apparatus Patent  
[NASA-CASE-XLA-00892] c 33 N71-17897  
Bismuth-lead coatings for gas bearings used in  
atmospheric environments and vacuum chambers Patent  
[NASA-CASE-XGS-02011] c 15 N71-20739  
Alkali metal silicate protective coating Patent  
[NASA-CASE-XGS-04799] c 18 N71-24183  
Process for reducing secondary electron emission  
Patent  
[NASA-CASE-XNP-09469] c 24 N71-25555  
Solid state thermal control polymer coating Patent  
[NASA-CASE-XLA-01745] c 33 N71-28903  
Method of coating through-holes Patent  
[NASA-CASE-XMF-05999] c 15 N71-29032  
Potassium silicate zinc coatings  
[NASA-CASE-GSC-10361-1] c 18 N72-23581  
Method of coating solar cell with borosilicate glass and  
resulant product  
[NASA-CASE-GSC-11514-1] c 03 N72-24037  
Semiconductor surface protection material  
[NASA-CASE-ERC-10339-1] c 18 N73-30532  
Nonflammable coating compositions — for use in high  
oxygen environments  
[NASA-CASE-MFS-20486-2] c 27 N74-17283



Fused silicide coatings containing discrete particles for protecting niobium alloys — used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229

High temperature oxidation resistant cermet compositions  
[NASA-CASE-NPO-13666-1] c 27 N77-13217

Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170

Intumescent coatings containing 4,4'-dinitrosulfanilide  
[NASA-CASE-ARC-11042-1] c 24 N78-14096

Sprayable low density ablative and application process  
[NASA-CASE-MFS-23506-1] c 24 N78-24290

Reaction cured glass and glass coatings  
[NASA-CASE-ARC-11051-1] c 27 N78-32260

Infusible silazane polymer and process for producing same — protective coatings  
[NASA-CASE-XMF-02526-1] c 27 N79-21190

Fire protection covering for small diameter missiles  
[NASA-CASE-ARC-11104-1] c 15 N79-26100

Curved film cooling admission tube  
[NASA-CASE-LEW-13174-1] c 34 N81-12363

Improved refractory coatings — sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209

Corrosion resistant thermal barrier coating — protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188

Thermal control coatings based on trialkoxysilane hydrolyzate binders — tolerance to ultraviolet radiation in vacuum  
[NASA-CASE-MFS-25620-1] c 24 N82-11118

Heat sealable, flame and abrasion resistant coated fabric — clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238

Covering solid, film cooled surfaces with a duplex thermal barrier coating  
[NASA-CASE-LEW-13450-1] c 34 N82-25463

Method of protecting a surface with a silicon-slurry/aluminate coating — coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441

Overlay metallic-cermet alloy coating systems — for gas turbine engines  
[NASA-CASE-LEW-13639-1] c 27 N82-33522

**PROTECTORS**

Load cell protection device Patent  
[NASA-CASE-XMS-06782] c 32 N71-15974

Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-09881] c 31 N71-16085

**PROTEINS**

Protein sterilization method of firefly luciferase using reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c 06 N73-27086

**PROTON FLUX DENSITY**

Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410

**PROXIMITY**

Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N81-22894

**PSEUDONOISE**

Rapid sync acquisition system Patent  
[NASA-CASE-NPO-10214] c 10 N71-26577

Pseudonoise sequence generators with three tap linear feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175

Two carrier communication system with single transmitter  
[NASA-CASE-NPO-11548] c 07 N73-26118

Pseudo-noise test set for communication system evaluation — test signals  
[NASA-CASE-MFS-22671-1] c 35 N75-21582

Pseudonoise code tracking loop  
[NASA-CASE-MSC-18035-1] c 32 N81-15179

**PULLEYS**

Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878

Tensile strength testing device Patent  
[NASA-CASE-XNP-05634] c 15 N71-24834

**PULMONARY CIRCULATION**

Resuscitation apparatus Patent  
[NASA-CASE-XMS-01115] c 05 N70-39922

**PULMONARY FUNCTIONS**

Instrument for use in performing a controlled Valsalva maneuver Patent  
[NASA-CASE-XMS-01615] c 05 N70-41329

**PULSE AMPLITUDE**

System for monitoring signal amplitude ranges  
[NASA-CASE-XMS-04061-1] c 09 N69-39885

Analogue to digital converter Patent  
[NASA-CASE-XLA-00670] c 08 N71-12501

Pulse amplitude and width detector Patent  
[NASA-CASE-XMF-06519] c 09 N71-12519

Analogue-to-digital converter  
[NASA-CASE-XNP-00477] c 08 N73-28045

Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-11389-1] c 33 N77-26387

Speech analyzer  
[NASA-CASE-GSC-11898-1] c 32 N77-30309

Power factor control system for ac induction motors  
[NASA-CASE-MFS-23988-1] c 33 N81-27395

**PULSE AMPLITUDE MODULATION**

Signal ratio system utilizing voltage controlled oscillators Patent  
[NASA-CASE-XMF-04367] c 09 N71-23545

Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418

**PULSE CODE MODULATION**

Adaptive compression of communication signals Patent  
[NASA-CASE-XLA-03076] c 07 N71-11266

Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392

System for recording and reproducing pulse code modulated data Patent  
[NASA-CASE-XGS-01021] c 08 N71-21042

Frequency shift keying apparatus Patent  
[NASA-CASE-XGS-01537] c 07 N71-23405

Data compression system  
[NASA-CASE-NPO-11243] c 07 N72-20154

Method and apparatus for frequency-division multiplex communications by digital phase shift of carrier  
[NASA-CASE-NPO-11338] c 08 N72-25208

Apparatus for deriving synchronizing pulses from pulses in a single channel PCM communications system  
[NASA-CASE-NPO-11302-1] c 07 N73-13149

Method and apparatus for a single channel digital communications system — synchronization of received PCM signal by digital correlation with reference signal  
[NASA-CASE-NPO-11302-2] c 32 N74-10132

Multifunction audio digitizer — producing direct delta and pulse code modulation  
[NASA-CASE-MSC-13855-1] c 35 N74-17885

Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12462-1] c 32 N74-20809

Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12494-1] c 32 N74-20810

Digital transmitter for data bus communications system  
[NASA-CASE-MSC-14558-1] c 32 N75-21486

Compact bi-phase pulse coded modulation decoder  
[NASA-CASE-KSC-10834-1] c 33 N76-14371

Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MSC-14557-1] c 32 N76-16249

Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c 32 N77-12239

Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570

**PULSE COMMUNICATION**

Phase-shift data transmission system having a pseudo-noise SYNC code modulated with the data in a single channel Patent  
[NASA-CASE-XNP-00911] c 08 N70-41961

Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c 32 N77-12239

Memory-based frame synchronizer — for digital communication systems  
[NASA-CASE-GSC-12430-1] c 60 N82-16747

**PULSE DURATION**

Frequency to analog converter Patent  
[NASA-CASE-XNP-07040] c 08 N71-12500

Pulse amplitude and width detector Patent  
[NASA-CASE-XMF-06519] c 09 N71-12519

Variable pulse width multiplier Patent  
[NASA-CASE-XLA-02850] c 09 N71-20447

Pulse width inverter Patent  
[NASA-CASE-MFS-10068] c 10 N71-25139

Multivibrator circuit with means to prevent false triggering from supply voltage fluctuations Patent  
[NASA-CASE-ARC-10137-1] c 09 N71-28468

Pulse stretcher for narrow pulses  
[NASA-CASE-MSC-14130-1] c 33 N74-32711

**PULSE DURATION MODULATION**

Pulse-width modulation multiplier Patent  
[NASA-CASE-XER-09213] c 07 N71-12390

Variable duration pulse integrator Patent  
[NASA-CASE-XLA-01219] c 10 N71-23084

Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMF-05195] c 10 N71-24861

Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418

Monostable multivibrator with complementary NOR gates Patent  
[NASA-CASE-MSC-13492-1] c 10 N71-28860

Load current sensor for a series pulse width modulated power supply  
[NASA-CASE-GSC-10656-1] c 09 N72-25249

Buck/boost regulator  
[NASA-CASE-GSC-12360-1] c 33 N81-19392

**PULSE FREQUENCY MODULATION**

Apparatus for measuring current flow Patent  
[NASA-CASE-XGS-02439] c 14 N71-19431

Digitally controlled frequency synthesizer Patent  
[NASA-CASE-XGS-02317] c 09 N71-23525

Noninterruptible digital counting system Patent  
[NASA-CASE-XNP-09759] c 08 N71-24891

Frequency modulation demodulator threshold extension device Patent  
[NASA-CASE-MSC-12165-1] c 07 N71-33698

Versatile LDV burst simulator  
[NASA-CASE-LAR-11859-1] c 35 N79-14349

**PULSE GENERATORS**

High voltage pulse generator Patent  
[NASA-CASE-MSC-12178-1] c 09 N71-13518

Flipflop interrogator and bi-polar current driver Patent  
[NASA-CASE-XGS-03058] c 10 N71-19547

Pulse modulator providing fast rise and fall times Patent  
[NASA-CASE-XMS-04919] c 09 N71-23270

Passive synchronized spike generator with high input impedance and low output impedance and capacitor power supply Patent  
[NASA-CASE-XGS-03632] c 09 N71-23311

Resettable monostable pulse generator Patent  
[NASA-CASE-GSC-11139] c 09 N71-27016

Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
[NASA-CASE-XNP-00745] c 10 N71-28960

Pulse coupling circuit  
[NASA-CASE-LEW-10433-1] c 09 N72-22197

Method and apparatus for nondestructive testing — using high frequency arc discharges  
[NASA-CASE-MFS-21233-1] c 38 N74-15395

Random pulse generator  
[NASA-CASE-MSC-14131-1] c 33 N75-19515

Frequency tracked pulse technique for ultrasonic analysis  
[NASA-CASE-LAR-12697-1] c 32 N80-26571

Active lamp pulse driver circuit — for use in laser transmitters  
[NASA-CASE-GSC-12566-1] c 36 N82-10390

**PULSE HEATING**

Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484

**PULSE RATE**

Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137

Peak holding circuit for extremely narrow pulses  
[NASA-CASE-MSC-14129-1] c 33 N75-18479

Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969

**PULSED LASERS**

Repetitively pulsed, wavelength selective laser Patent  
[NASA-CASE-ERC-10178] c 16 N71-24832

Dually mode locked Nd:YAG laser  
[NASA-CASE-GSC-11746-1] c 36 N75-19654

Isotope separation using metallic vapor lasers  
[NASA-CASE-NPO-13550-1] c 36 N77-26477

Tunable injection-locked pulsed CO<sub>2</sub> laser  
[NASA-CASE-NPO-14984-1] c 36 N81-15350

Double-beam optical method and apparatus for measuring thermal diffusivity and other molecular dynamic processes in utilizing the transient thermal lens effect  
[NASA-CASE-NPO-14657-1] c 74 N81-17887

Method of and apparatus for double-exposure holographic interferometry  
[NASA-CASE-MFS-25405-1] c 35 N81-27459

Active lamp pulse driver circuit — for use in laser transmitters  
[NASA-CASE-GSC-12566-1] c 36 N82-10390

Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418

Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589

**PULSED RADIATION**

Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427

**PULSES**

High pulse rate high resolution optical radar system  
[NASA-CASE-NPO-11426] c 07 N73-28119

**PUMP SEALS**

Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747

Spiral groove seal — for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c 37 N74-10474

**PUMPS**

Piezoelectric pump Patent  
[NASA-CASE-XNP-05429] c 26 N71-21824



Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023  
Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042  
Hydraulic transformer Patent  
[NASA-CASE-MFS-20830] c 15 N71-30028  
Firefly pump-metering system  
[NASA-CASE-GSC-10218-1] c 15 N72-21465  
Magnetocaloric pump — for cryogenic fluids  
[NASA-CASE-LEW-11672-1] c 37 N74-27904  
Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154  
A gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 37 N81-24445

**PUNCHED CARDS**

File card marker Patent  
[NASA-CASE-XLA-02705] c 08 N71-15908  
Device for handling printed circuit cards Patent  
[NASA-CASE-MFS-20453] c 15 N71-29133

**PUNCHES**

Convoluting device for forming convolutions and the like  
Patent  
[NASA-CASE-XNP-05297] c 15 N71-23811

**PURGING**

Techniques for insulating cryogenic fuel containers  
Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015  
High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c 14 N71-17588  
Apparatus for purging systems handling toxic, corrosive,  
noxious and other fluids Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089  
Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c 28 N71-28849  
Purging means and method for Xenon arc lamps  
[NASA-CASE-NPO-11978] c 31 N78-17238

**PURIFICATION**

High pressure helium purifier Patent  
[NASA-CASE-XMF-06888] c 15 N71-24044  
Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c 15 N71-27184  
Targets for producing high purity I-123  
[NASA-CASE-LEW-10518-3] c 25 N78-27226  
Process for purification of waste water produced by a  
Kraft process pulp and paper mill  
[NASA-CASE-NPO-13847-2] c 85 N79-17747  
Method of purifying metallurgical grade silicon employing  
reduced pressure atmosphere control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229  
Membrane consisting of polyquaternary amine ion  
exchange polymer network interpenetrating the chains of  
thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076  
Electromigration process for the purification of molten  
silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N81-19944  
Electromigration process for the purification of molten  
silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N82-30105

**PURITY**

Process for preparation of diamilosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230

**PUSH-PULL AMPLIFIERS**

Frequency modulated oscillator  
[NASA-CASE-MFS-23181-1] c 33 N77-17351  
Low current linearization of magnetic amplifier for dc  
transducer  
[NASA-CASE-NPO-14617-1] c 33 N81-24338  
Push-pull converter with energy saving circuit for  
protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404

**PYLONS**

Decoupler pylon: wing/store flutter suppressor  
[NASA-CASE-LAR-12468-1] c 08 N82-32373

**PYRIDINES**

Nuclear alkylated pyridine aldehyde polymers and  
conductive compositions thereof  
[NASA-CASE-NPO-10557] c 27 N78-17214

**PYROELECTRICITY**

Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659

**PYROGEN**

Molded composite pyrogen igniter for rocket motors —  
solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275

**PYROLYSIS**

Molten salt pyrolysis of latex — synthetic hydrocarbon  
fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261

**PYROLYTIC GRAPHITE**

Multislot film cooled pyrolytic graphite rocket nozzle  
Patent  
[NASA-CASE-XNP-04389] c 28 N71-20942  
Ion beam textured graphite electrode plates — high  
efficiency electron tube devices  
[NASA-CASE-LEW-12919-2] c 24 N82-26386

**PYROLYTIC MATERIALS**

Ablation structures Patent  
[NASA-CASE-XMS-01816] c 33 N71-15623

**PYROMETERS**

Ablation sensor  
[NASA-CASE-XLA-01781] c 14 N69-39975

**PYROTECHNICS**

Disconnect unit  
[NASA-CASE-NPO-11330] c 33 N73-26958

**PYRRONES (TRADEMARK)**

Method for forming pyrrone molding powders and  
products of said method  
[NASA-CASE-LAR-10423-1] c 23 N82-29358

**Q****Q SWITCHED LASERS**

Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425  
Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c 36 N77-32478  
Laser resonator  
[NASA-CASE-GSC-12565-1] c 36 N82-24485

**Q VALUES**

Active RC networks  
[NASA-CASE-ARC-10042-2] c 10 N72-11256

**QUADRATIC PROGRAMMING**

Quadrature demodulation  
[NASA-CASE-GSC-12137-1] c 33 N78-32338

**QUADRATURES**

Automatic quadrature control and measuring system —  
using optical coupling circuitry  
[NASA-CASE-MFS-21660-1] c 35 N74-21017

**QUALITATIVE ANALYSIS**

Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428  
Analysis of volatile organic compounds — trace amounts  
of organic volatiles in gas samples  
[NASA-CASE-MSC-14428-1] c 23 N77-17161  
Fluid sample collection and distribution system —  
qualitative analysis of aqueous samples from several  
points  
[NASA-CASE-MSC-16841-1] c 34 N79-24285

**QUANTITATIVE ANALYSIS**

Fluid phase analyzer Patent  
[NASA-CASE-NPO-10691] c 14 N71-26199  
Apparatus for detecting the amount of material in a  
resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397  
Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428  
Nondispersive gas analyzing method and apparatus  
wherein radiation is serially passed through a reference  
and unknown gas  
[NASA-CASE-ARC-10308-1] c 06 N72-31141  
Analysis of volatile organic compounds — trace amounts  
of organic volatiles in gas samples  
[NASA-CASE-MSC-14428-1] c 23 N77-17161  
Electrophotolysis oxidation system for measurement of  
organic concentration in water  
[NASA-CASE-MSC-16497-1] c 25 N82-12166  
Method and apparatus for detecting coliform  
organisms  
[NASA-CASE-ARC-11322-1] c 51 N82-12739

**QUANTUM THEORY**

III-V photocathode with nitrogen doping for increased  
quantum efficiency  
[NASA-CASE-NPO-12134-1] c 33 N76-31409

**QUARTZ**

Ultraviolet filter  
[NASA-CASE-XNP-02340] c 23 N69-24332  
Method for attaching a fused-quartz mirror to a  
conductive metal substrate  
[NASA-CASE-MFS-23405-1] c 26 N77-29260  
Quartz ball valve  
[NASA-CASE-NPO-14473-1] c 37 N80-23654

**QUARTZ LAMPS**

High intensity heat and light unit Patent  
[NASA-CASE-XLA-00141] c 09 N70-33312  
Light shield and cooling apparatus — high intensity  
ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c 34 N74-23066

**QUINOXALINES**

Polyphenylquinoxalines containing pendant  
phenylethynyl and ethynyl groups — thermoplastic resins  
[NASA-CASE-LAR-12838-1] c 27 N82-26463

**R****RACKS (FRAMES)**

Test stand system for vacuum chambers  
[NASA-CASE-MFS-21362] c 11 N73-20267

Thrust-isolating mounting — characteristics of support  
for loads mounted in spacecraft  
[NASA-CASE-MFS-21680-1] c 18 N74-27397

Automated syringe sampler — remote sampling of air  
and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407

**RADAR ANTENNAS**

Radar antenna system for acquisition and tracking  
Patent  
[NASA-CASE-XMS-09610] c 07 N71-24625  
Variable beamwidth antenna — with multiple beam,  
variable feed system  
[NASA-CASE-GSC-11862-1] c 32 N76-18295  
Highly efficient antenna system using a corrugated horn  
and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365  
Baseband signal combiner for large aperture antenna  
array  
[NASA-CASE-NPO-14641-1] c 32 N81-29308

**RADAR ATTENUATION**

FM/CW radar system  
[NASA-CASE-MFS-22234-1] c 32 N79-10264

**RADAR DATA**

Charge-coupled device data processor for an airborne  
imaging radar system  
[NASA-CASE-NPO-13587-1] c 32 N77-32342

**RADAR ECHOES**

Charge-coupled device data processor for an airborne  
imaging radar system  
[NASA-CASE-NPO-13587-1] c 32 N77-32342

**RADAR EQUIPMENT**

Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118  
FM/CW radar system  
[NASA-CASE-MFS-22234-1] c 32 N79-10264

**RADAR IMAGERY**

Method of locating persons in distress — by using radar  
imagery from radar reflectors  
[NASA-CASE-LAR-11390-1] c 32 N77-21267  
Clutter free synthetic aperture radar correlator  
[NASA-CASE-NPO-14035-1] c 32 N78-18266  
Multibeam single frequency synthetic aperture radar  
processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-1] c 32 N79-19195  
Radar target for remotely sensing hydrological  
phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498  
Multibeam single frequency synthetic aperture radar  
processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N80-32607  
Real-time multiple-look synthetic aperture radar  
processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297

**RADAR MEASUREMENT**

Thickness measurement system  
[NASA-CASE-MFS-23721-1] c 31 N79-28370

**RADAR RANGE**

Radar ranging receiver Patent  
[NASA-CASE-XNP-00748] c 07 N70-36911

**RADAR RECEIVERS**

Polarization diversity monopulse tracking receiver  
Patent  
[NASA-CASE-XGS-03501] c 09 N71-20864  
Wideband passive synthetic-aperture multichannel  
receiver  
[NASA-CASE-NPO-15651-1] c 32 N82-26523

**RADAR RECEPTION**

Radar ranging receiver Patent  
[NASA-CASE-XNP-00748] c 07 N70-36911

**RADAR REFLECTORS**

Inflatable radar reflector unit Patent  
[NASA-CASE-XMS-00893] c 07 N70-40063  
Method of locating persons in distress — by using radar  
imagery from radar reflectors  
[NASA-CASE-LAR-11390-1] c 32 N77-21267

**RADAR TARGETS**

Radar target for remotely sensing hydrological  
phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498  
Synthetic aperture radar target simulator  
[NASA-CASE-NPO-15024-1] c 32 N82-10286

**RADAR TRACKING**

Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c 07 N71-19854  
Polarization diversity monopulse tracking receiver  
Patent  
[NASA-CASE-XGS-03501] c 09 N71-20864  
Monopulse tracking system Patent  
[NASA-CASE-XGS-01155] c 10 N71-21483  
Radar calibration sphere  
[NASA-CASE-XLA-11154] c 07 N72-21117  
Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376

**RADAR TRANSMITTERS**

High pulse rate high resolution optical radar system  
[NASA-CASE-NPO-11426] c 07 N73-26119



## RADIAL FLOW

- Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948  
Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c 37 N76-18459

## RADIANCE

- Shock-layer radiation measurement  
[NASA-CASE-XAC-02970] c 14 N69-39896

## RADIANT COOLING

- Direct radiation cooling of the collector of linear beam tubes  
[NASA-CASE-XNP-09227] c 15 N69-24319  
Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875  
Method for attaching a fused-quartz mirror to a conductive metal substrate  
[NASA-CASE-MFS-23405-1] c 26 N77-29260  
Radiative cooler  
[NASA-CASE-NPO-15465-1] c 18 N82-10106

## RADIANT FLUX DENSITY

- High intensity radiant energy pulse source having means for opening shutter when light flux has reached a desired level  
[NASA-CASE-ARC-10178-1] c 09 N72-17152  
Microwave power transmission beam safety system  
[NASA-CASE-NPO-14224-1] c 33 N80-18287

## RADIANT HEATING

- High intensity heat and light unit Patent  
[NASA-CASE-XLA-00141] c 09 N70-33312  
High temperature heat source Patent  
[NASA-CASE-XLE-00490] c 33 N70-34545  
Radiant heater having formed filaments Patent  
[NASA-CASE-XLE-00387] c 33 N70-34812  
Ceramic insulation for radiant heating environments and method of preparing the same Patent  
[NASA-CASE-MFS-14253] c 33 N71-24858  
Portable linear-focused solar thermal energy collecting system  
[NASA-CASE-NPO-13734-1] c 44 N78-10554  
High thermal power density heat transfer — thermionic converters  
[NASA-CASE-LEW-12950-1] c 34 N82-11399

## RADIATION

- Two color horizon sensor  
[NASA-CASE-ERC-10174] c 14 N72-25409  
Irradiance measuring device  
[NASA-CASE-NPO-11493] c 14 N73-12447  
Analog to digital converter for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-3] c 60 N77-32731  
Memory device for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-2] c 60 N78-10709

## RADIATION ABSORPTION

- NDIR gas analyzer based on absorption modulation ratios for known and unknown samples  
[NASA-CASE-ARC-10802-1] c 35 N75-30502  
Method for making an aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-1] c 44 N79-11469

## RADIATION COUNTERS

- Particle detection apparatus Patent  
[NASA-CASE-XLA-00135] c 14 N70-33322  
Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent  
[NASA-CASE-XGS-00466] c 21 N70-34297  
Particle beam measurement apparatus using beam kinetic energy to change the heat sensitive resistance of the detection probe Patent  
[NASA-CASE-XLE-00243] c 14 N70-38602  
Baseline stabilization system for ionization detector Patent  
[NASA-CASE-XNP-03128] c 10 N70-41991  
Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560  
Dosimeter for high levels of absorbed radiation Patent  
[NASA-CASE-XLA-03645] c 14 N71-20430  
Coincidence apparatus for detecting particles  
[NASA-CASE-XLA-07813] c 14 N72-17328  
Radiation and particle detector and amplifier  
[NASA-CASE-NPO-12128-1] c 14 N73-32317  
Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c 35 N74-26949  
Particle parameter analyzing system — x-y plotter circuits and display  
[NASA-CASE-XLE-06094] c 33 N78-17293  
Method and means for helium/hydrogen ratio measurement by alpha scattering  
[NASA-CASE-NPO-14079-1] c 25 N80-20334  
Ion mass spectrometer — exploring comet tails  
[NASA-CASE-NPO-15423-1] c 91 N82-25042

## RADIATION DAMAGE

- Semiconductor material and method of making same Patent  
[NASA-CASE-XLE-02798] c 26 N71-23654  
Recovery of radiation damaged solar cells through thermal annealing  
[NASA-CASE-XGS-04047-2] c 03 N72-11062  
Photomultiplier circuit including means for rapidly reducing the sensitivity thereof — and protection from radiation damage  
[NASA-CASE-ARC-10593-1] c 33 N74-27682

## RADIATION DETECTORS

- Penetrating radiation system for detecting the amount of liquid in a tank Patent  
[NASA-CASE-MSC-12280] c 27 N71-16348  
Light detection instrument Patent  
[NASA-CASE-XGS-05534] c 23 N71-16355  
Altitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880  
Extended area semiconductor radiation detectors and a novel readout arrangement Patent  
[NASA-CASE-XGS-03230] c 14 N71-23401  
Nondispersive gas analyzing method and apparatus wherein radiation is sensibly passed through a reference and unknown gas  
[NASA-CASE-ARC-10308-1] c 06 N72-31141  
Radiant source tracker independent of nonconstant irradiance  
[NASA-CASE-NPO-11686] c 14 N73-25462  
Radiation and particle detector and amplifier  
[NASA-CASE-NPO-12128-1] c 14 N73-32317  
Mossbauer spectrometer radiation detector  
[NASA-CASE-LAR-11155-1] c 35 N74-15091  
High field CdS detector for infrared radiation  
[NASA-CASE-LAR-11027-1] c 35 N74-18088  
Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410  
Wide angle sun sensor — consisting of cylinder, insulation and pair of detectors  
[NASA-CASE-NPO-13327-1] c 35 N75-23910  
Detector absorptivity measuring method and apparatus  
[NASA-CASE-LAR-10907-1] c 35 N76-29551  
Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449  
Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N81-12388  
X-ray position detector  
[NASA-CASE-NPO-12087-1] c 74 N81-19898  
Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 72 N82-24953

## RADIATION DISTRIBUTION

- Space simulator Patent  
[NASA-CASE-XNP-00459] c 11 N70-38675

## RADIATION DOSAGE

- Dosimeter for high levels of absorbed radiation Patent  
[NASA-CASE-XLA-03645] c 14 N71-20430  
Method for analyzing radiation sensitivity of integrated circuits  
[NASA-CASE-NPO-14350-1] c 33 N80-14332

## RADIATION EFFECTS

- Method of temperature compensating semiconductor strain gages Patent  
[NASA-CASE-XLA-04555-1] c 14 N71-25892

## RADIATION HARDENING

- Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c 76 N74-20329

## RADIATION HAZARDS

- Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N81-12388

## RADIATION MEASUREMENT

- Irradiance measuring device  
[NASA-CASE-NPO-11493] c 14 N73-12447

## RADIATION MEASURING INSTRUMENTS

- Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432  
Infrared scanner Patent  
[NASA-CASE-XLA-00120] c 21 N70-33181  
Instrument for the quantitative measurement of radiation at multiple wave lengths Patent  
[NASA-CASE-XLE-00011] c 14 N70-41946  
Method for improving the signal-to-noise ratio of the Wheatstone bridge type bolometer Patent  
[NASA-CASE-XLA-02810] c 14 N71-25901  
Irradiance measuring device  
[NASA-CASE-NPO-11493] c 14 N73-12447  
Phototransistor  
[NASA-CASE-MFS-20407] c 09 N73-19235  
Method and apparatus for measuring electromagnetic radiation  
[NASA-CASE-LEW-11159-1] c 14 N73-28488

- Compton scatter attenuation gamma ray spectrometer  
[NASA-CASE-MFS-21441-1] c 14 N73-30392  
Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c 35 N74-26949  
Cloud cover sensor  
[NASA-CASE-NPO-14936-1] c 47 N80-26992

## RADIATION MEDICINE

- Method of producing I-123 — by bombardment of cesium causing spallation  
[NASA-CASE-LEW-11390-2] c 25 N76-27383

## RADIATION PROTECTION

- Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852  
Laser coolant and ultraviolet filter  
[NASA-CASE-MFS-20180] c 16 N72-12440  
Photomultiplier circuit including means for rapidly reducing the sensitivity thereof — and protection from radiation damage  
[NASA-CASE-ARC-10593-1] c 33 N74-27682
- RADIATION SHIELDING**  
Ion thruster cathode Patent Application  
[NASA-CASE-LEW-10814-1] c 28 N70-35422  
Ionization vacuum gauge with all but the end of the ion collector shielded Patent  
[NASA-CASE-XLA-07424] c 14 N71-18482  
Sealed cabinetry Patent  
[NASA-CASE-MSC-12168-1] c 09 N71-18600  
Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781  
Zero gravity shadow shield aligner  
[NASA-CASE-KSC-10622-1] c 31 N72-21893  
Light shield and cooling apparatus — high intensity ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c 34 N74-23066  
Saltless solar pond  
[NASA-CASE-NPO-15808-1] c 44 N82-29714

## RADIATION SOURCES

- Sight switch using an infrared source and sensor Patent  
[NASA-CASE-XMF-03934] c 09 N71-22985  
Apparatus for obtaining isotropic irradiation of a specimen  
[NASA-CASE-MFS-20095] c 24 N72-11595  
Radiant source tracker independent of nonconstant irradiance  
[NASA-CASE-NPO-11686] c 14 N73-25462  
High powered arc electrodes — producing solar simulator radiation  
[NASA-CASE-LEW-11162-1] c 33 N74-12913  
Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c 33 N75-29318

## RADIATION SPECTRA

- Maksutov spectrograph Patent  
[NASA-CASE-XLA-10402] c 14 N71-29041

## RADIATION THERAPY

- Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

## RADIATION TOLERANCE

- Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979  
Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607  
Radiation resistant silicon semiconductor devices Patent  
[NASA-CASE-XGS-07801] c 09 N71-12513  
Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c 76 N75-25730  
Method for analyzing radiation sensitivity of integrated circuits  
[NASA-CASE-NPO-14350-1] c 33 N80-14332

## RADIATIVE HEAT TRANSFER

- Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c 14 N69-27459  
Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035  
Transient heat transfer gauge Patent  
[NASA-CASE-XNP-09802] c 33 N71-15641  
Construction and method of arranging a plurality of ion engines to form a cluster Patent  
[NASA-CASE-XNP-02923] c 28 N71-23081  
Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 76 N81-30012  
Radiative cooler  
[NASA-CASE-NPO-15465-1] c 18 N82-10106

## RADIATORS

- Self-adjusting multisegment, deployable, natural circulation radiator Patent  
[NASA-CASE-XHQ-03673] c 33 N71-29046



**RADIO ANTENNAS**

- Parasitic probe antenna Patent  
[NASA-CASE-XKS-09348] c 09 N71-13521
- VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c 07 N71-24614
- Unfurlable structure including coiled strips thrust  
launched upon tension release Patent  
[NASA-CASE-HQN-00937] c 07 N71-28979
- Highly efficient antenna system using a corrugated horn  
and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365

**RADIO ASTRONOMY**

- Millimeter wave radiometer for radio astronomy Patent  
[NASA-CASE-XNP-09832] c 30 N71-23723

**RADIO BEACONS**

- RF beam center location method and apparatus for  
power transmission system  
[NASA-CASE-NPO-13821-1] c 44 N78-28594

**RADIO COMMUNICATION**

- System for synchronizing synthesizers of communication  
systems  
[NASA-CASE-GSC-12148-1] c 32 N79-20296

**RADIO CONTROL**

- RF controlled solid state switch  
[NASA-CASE-ARC-10136-1] c 09 N72-22202

**RADIO EQUIPMENT**

- System for synchronizing synthesizers of communication  
systems  
[NASA-CASE-GSC-12148-1] c 32 N79-20296

**RADIO FREQUENCIES**

- Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c 07 N69-24323
- Automatic gain control system  
[NASA-CASE-XMS-05307] c 09 N69-24330
- Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436
- Automatic frequency discriminators and control for a  
phase-lock loop providing frequency preset capabilities  
Patent  
[NASA-CASE-XMF-08665] c 10 N71-19467
- Sidereal frequency generator Patent  
[NASA-CASE-XGS-02610] c 14 N71-23174
- Radio frequency coaxial high pass filter Patent  
[NASA-CASE-XGS-01418] c 09 N71-23573
- Variable frequency nuclear magnetic resonance  
spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266
- Signal path series step biased multidevice high efficiency  
amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430
- Method and apparatus for sputtering utilizing an  
apertured electrode and a pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c 17 N73-24569
- RF-source resistance meters  
[NASA-CASE-NPO-11291-1] c 14 N73-30388
- Multichannel logarithmic RF level detector  
[NASA-CASE-LAR-11021-1] c 32 N76-14321
- Ion and electron detector for use in an ICR  
spectrometer  
[NASA-CASE-NPO-13479-1] c 35 N77-10492
- Radio frequency arraying method for receivers  
[NASA-CASE-NPO-14328-1] c 32 N80-18253
- Precise RF timing signal distribution to remote stations  
— fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186
- Pulsed phase locked loop strain monitor  
[NASA-CASE-LAR-12772-1] c 33 N81-15195
- High stability buffered phase comparator  
[NASA-CASE-GSC-12645-1] c 33 N81-31482
- Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996

**RADIO FREQUENCY DISCHARGE**

- Electric discharge for treatment of trace contaminants  
[NASA-CASE-ARC-10975-1] c 33 N79-15245

**RADIO FREQUENCY HEATING**

- Gyrotron transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N81-16384

**RADIO FREQUENCY INTERFERENCE**

- Parametric microwave noise generator Patent  
[NASA-CASE-XER-11019] c 09 N71-23598
- System for interference signal nulling by polarization  
adjustment  
[NASA-CASE-NPO-13140-1] c 32 N75-24982
- Systems and methods for determining radio frequency  
interference  
[NASA-CASE-GSC-12150-1] c 32 N79-11265
- Apparatus and method for determining the position of  
a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341

**RADIO FREQUENCY SHIELDING**

- Shielded cathode mode bulk effect devices  
[NASA-CASE-ERC-10119] c 26 N72-21701
- Process for making RF shielded cable connector  
assemblies and the products formed thereby  
[NASA-CASE-GSC-11215-1] c 09 N73-28083

**RADIO INTERFEROMETERS**

- System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603

**RADIO RECEIVERS**

- Multiple input radio receiver Patent  
[NASA-CASE-XLA-00901] c 07 N71-10775
- Optimum predetection diversity receiving system  
Patent  
[NASA-CASE-XGS-00740] c 07 N71-23098
- Radio frequency arraying method for receivers  
[NASA-CASE-NPO-14328-1] c 32 N80-18253
- Interferometric locating system  
[NASA-CASE-NPO-14173-1] c 04 N80-32359

**RADIO RELAY SYSTEMS**

- Satellite communication system Patent  
[NASA-CASE-XNP-02389] c 07 N71-28900
- Systems and methods for determining radio frequency  
interference  
[NASA-CASE-GSC-12150-1] c 32 N79-11265

**RADIO SIGNALS**

- Passive communication satellite Patent  
[NASA-CASE-XLA-00210] c 30 N70-40309
- Millimeter wave radiometer for radio astronomy Patent  
[NASA-CASE-XNP-09832] c 30 N71-23723

**RADIO SOURCES (ASTRONOMY)**

- Conical scan tracking system employing a large  
antenna  
[NASA-CASE-NPO-14009-1] c 32 N79-13214

**RADIO STARS**

- Sidereal frequency generator Patent  
[NASA-CASE-XGS-02610] c 14 N71-23174

**RADIO TELEMETRY**

- Digital telemetry system Patent  
[NASA-CASE-XGS-01812] c 07 N71-23001

**RADIO TELESCOPES**

- Antenna mount replacement system  
[NASA-CASE-NPO-15205-1] c 37 N81-19457

**RADIO TRANSMITTERS**

- Vehicle locating system utilizing AM broadcasting station  
carriers  
[NASA-CASE-NPO-13217-1] c 32 N75-26194
- Aircraft-mounted crash-activated transmitter device  
[NASA-CASE-MFS-16609-3] c 03 N76-32140
- Low-frequency radio navigation system  
[NASA-CASE-NPO-15264-1] c 04 N81-22036

**RADIO WAVES**

- Shielded cathode mode bulk effect devices  
[NASA-CASE-ERC-10119] c 26 N72-21701

**RADIOACTIVE ISOTOPES**

- Thermally cascaded thermoelectric generator  
[NASA-CASE-NPO-10753] c 03 N72-26031
- Protected isotope heat source — for atmospheric reentry  
protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876

**RADIOACTIVE WASTES**

- Method and system for nuclear waste disposal — control  
valves for encapsulating wastes  
[NASA-CASE-NPO-15454-1] c 73 N82-12916

**RADIOBIOLOGY**

- Production of high purity I-123  
[NASA-CASE-LEW-10518-1] c 24 N72-33681

**RADIOGRAPHY**

- Determination of spot weld quality Patent  
[NASA-CASE-XNP-02588] c 15 N71-18613
- Method and system for in vivo measurement of bone  
tissue using a two level energy source  
[NASA-CASE-MSG-14276-1] c 52 N77-14737
- Low X-ray absorption aneurysm clips  
[NASA-CASE-LAR-12650-1] c 52 N81-29768

**RADIOLOGY**

- Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996

**RADIOLYSIS**

- Process for making anhydrous metal halides  
[NASA-CASE-LEW-11860-1] c 37 N76-18458

**RADIOMETERS**

- Compensating radiometer  
[NASA-CASE-XLA-04556] c 14 N69-27484
- Conically shaped cavity radiometer with a dual purpose  
cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475
- Black body cavity radiometer Patent  
[NASA-CASE-NPO-10810] c 14 N71-27323
- Thermoelectric radiometer utilizing polymer film  
[NASA-CASE-ARC-10138-1] c 14 N72-24477
- Two color horizon sensor  
[NASA-CASE-ERC-10174] c 14 N72-25409
- Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437
- Method and apparatus for measuring solar activity and  
atmospheric radiation effects  
[NASA-CASE-ERC-10276] c 14 N73-28432
- Steady state thermal radiometers  
[NASA-CASE-MFS-21108-1] c 34 N74-27661

- Method and apparatus for precision control of  
radiometer  
[NASA-CASE-NPO-15398-1] c 35 N81-33449

**RADIOSONDES**

- Induction powered biological radiosonde  
[NASA-CASE-ARC-11120-1] c 52 N80-18691

**RAIN**

- Precipitation detector Patent  
[NASA-CASE-XLA-02619] c 10 N71-26334
- Environmental fog/rain visual display system for aircraft  
simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212

**RAMJET ENGINES**

- Telescoping-spike supersonic inlet for aircraft engines  
Patent  
[NASA-CASE-XLE-00005] c 28 N70-39899
- Hypersonic airbreathing missile  
[NASA-CASE-LAR-12264-1] c 15 N78-32168

**RAMPS (STRUCTURES)**

- Automated multi-level vehicle parking system  
[NASA-CASE-NPO-13058-1] c 37 N77-22480

**RANDOM ACCESS MEMORY**

- Memory-based parallel data output controller  
[NASA-CASE-GSC-12447-1] c 60 N80-21987
- Memory-based frame synchronizer — for digital  
communication systems  
[NASA-CASE-GSC-12430-1] c 60 N82-16747

**RANDOM LOADS**

- Fatigue testing device Patent  
[NASA-CASE-XLA-02131] c 32 N70-42003

**RANDOM NOISE**

- Noise limiter Patent  
[NASA-CASE-NPO-10169] c 10 N71-24844
- Digital servo control of random sound test excitation  
— in reverberant acoustic chamber  
[NASA-CASE-NPO-11623-1] c 71 N74-31148
- Random pulse generator  
[NASA-CASE-MSG-14131-1] c 33 N75-19515
- Pseudo noise code and data transmission method and  
apparatus  
[NASA-CASE-GSC-12017-1] c 32 N77-30308

**RANGE (EXTREMES)**

- Logarithmic circuit with wide dynamic range  
[NASA-CASE-GSC-12145-1] c 33 N78-32339

**RANGE FINDERS**

- Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c 21 N70-41930
- Digital demodulator-correlator  
[NASA-CASE-NPO-13982-1] c 32 N79-14267
- Doppler radar having phase modulation of both  
transmitted and reflected return signals — rangefinding  
[NASA-CASE-MSG-18675-1] c 32 N81-29312
- Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376

**RANGEFINDING**

- Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391
- Ranging system Patent  
[NASA-CASE-NPO-10066] c 09 N71-18598
- Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11194] c 08 N72-25209
- Code regenerative clean-up loop transponder for a  
multi-type ranging system  
[NASA-CASE-NPO-11707] c 07 N73-25161
- Orbital and entry tracking accessory for globes — to  
provide range requirements for reentry vehicles to any  
landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015

**RARE EARTH COMPOUNDS**

- Didymium hydrate additive to nickel hydroxide electrodes  
Patent  
[NASA-CASE-XGS-03505] c 03 N71-10608
- High modulus rare earth and beryllium containing silicate  
glass compositions — for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455

**RARE GASES**

- Inert gas metallic vapor laser  
[NASA-CASE-NPO-13449-1] c 36 N75-32441

**RAREFIED GASES**

- Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N82-33681

**RAREFIED GASES**

- Magnetically controlled plasma accelerator Patent  
[NASA-CASE-XLA-00327] c 25 N71-29184

**RATES (PER TIME)**

- Rate data encoder  
[NASA-CASE-LAR-10128-1] c 08 N73-20217

**RC CIRCUITS**

- Pulse counting circuit which simultaneously indicates the  
occurrence of the nth pulse Patent  
[NASA-CASE-XMF-00906] c 09 N70-41655
- RC rate generator for slow speed measurement  
Patent  
[NASA-CASE-XMF-02966] c 10 N71-24863
- Transient augmentation circuit for pulse amplifiers  
Patent  
[NASA-CASE-XNP-01068] c 10 N71-28739



Active RC networks  
[NASA-CASE-ARC-10042-2] c 10 N72-11256  
RC networks and amplifiers employing the same  
[NASA-CASE-XAC-05462-2] c 10 N72-17171

Active RC networks  
[NASA-CASE-ARC-10020] c 10 N72-17172  
Multiloop RC active filter apparatus having low parameter sensitivity with low amplifier gain  
[NASA-CASE-ARC-10192] c 09 N72-21245  
Temperature control system with a pulse width modulated bridge  
[NASA-CASE-NPO-11304] c 14 N73-26430  
Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-3] c 33 N75-19520

**REACTION CONTROL**  
Voice operated controller Patent  
[NASA-CASE-XLA-04063] c 31 N71-33160

**REACTION KINETICS**  
Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174

**REACTION TIME**  
Pseudonoise code tracking loop  
[NASA-CASE-MSC-18035-1] c 32 N81-15179

**REACTION WHEELS**  
Reaction wheel scanner Patent  
[NASA-CASE-XGS-02629] c 14 N71-21082  
Gravity gradient attitude control system Patent  
[NASA-CASE-GSC-10555-1] c 21 N71-27324

**REACTIVITY**  
Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597

**REACTOR CORES**  
Uninsulated in-core thermionic diode  
[NASA-CASE-NPO-10542] c 09 N72-27228

**REACTOR DESIGN**  
Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c 73 N78-19920

**REACTOR MATERIALS**  
Zirconium modified nickel-copper alloy  
[NASA-CASE-LEW-12245-1] c 26 N77-20201

**REACTOR PHYSICS**  
Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c 73 N78-19920

**READOUT**  
Flow angle sensor and read out system Patent  
[NASA-CASE-XLE-04503] c 14 N71-24864  
Plural position switch status and operativeness checker Patent  
[NASA-CASE-XLA-08799] c 10 N71-27272  
Magneto-optic detection system with noise cancellation  
[NASA-CASE-NPO-11954-1] c 35 N78-29421

**REAL TIME OPERATION**  
Respiratory analysis system and method  
[NASA-CASE-MSC-13436-1] c 05 N73-32015  
Real time moving scene holographic camera system  
[NASA-CASE-MFS-21087-1] c 35 N74-17153  
Real time, large volume, moving scene holographic camera system  
[NASA-CASE-MFS-22537-1] c 35 N75-27328  
Carbon monoxide monitor — using real time operation  
[NASA-CASE-MFS-22060-1] c 35 N75-29380  
Real time analysis of voiced sounds  
[NASA-CASE-NPO-13465-1] c 32 N76-31372  
Real time reflectometer — measurement of specular reflectance  
[NASA-CASE-MFS-23118-1] c 35 N77-31465  
Contour detector and data acquisition system for the left ventricular outline  
[NASA-CASE-ARC-10985-1] c 52 N79-10724  
Azimuth correlator for real-time synthetic aperture radar image processing  
[NASA-CASE-NPO-14019-1] c 32 N79-14268  
System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603  
X-ray position detector  
[NASA-CASE-NPO-12087-1] c 74 N81-19898  
Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297  
Real time pressure signal system for a rotary engine  
[NASA-CASE-LEW-13622-1] c 07 N82-26294

**REBREATHING**  
Portable breathing system — a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MSC-16182-1] c 54 N80-10799

**RECEIVERS**  
System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616  
Receiver with an improved phase lock loop in a multichannel telemetry system with suppressed carrier  
[NASA-CASE-NPO-11593-1] c 07 N73-28012  
Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113

Coherent receiver employing nonlinear coherence detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c 32 N74-30523  
Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MSC-14557-1] c 32 N76-16249  
Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346  
Receiving and tracking phase modulated signals  
[NASA-CASE-MSC-16170-2] c 32 N81-16338  
Self-calibrating threshold detector  
[NASA-CASE-MSC-16370-1] c 35 N81-19427

**RECHARGING**  
Hot melt recharge system  
[NASA-CASE-LAR-12881-1] c 27 N82-26464

**RECIPROCATION**  
Precision reciprocating filament chopper  
[NASA-CASE-LAR-12564-2] c 37 N82-18604

**RECONSTRUCTION**  
Method and means for recording and reconstructing holograms without use of a reference beam Patent  
[NASA-CASE-ERC-10020] c 16 N71-26154

**RECORDING HEADS**  
Electromagnetic transducer recording head having a laminated core section and tapered gap  
[NASA-CASE-NPO-10711-1] c 35 N77-21392

**RECORDING INSTRUMENTS**  
Automatic force measuring system Patent  
[NASA-CASE-XLA-02605] c 14 N71-10773  
Blood pressure measuring system for separating and separately recording dc signal and an ac signal Patent  
[NASA-CASE-XMS-06061] c 05 N71-23317  
Helical recorder arrangement for multiple channel recording on both sides of the tape  
[NASA-CASE-GSC-10614-1] c 09 N72-11224  
Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c 36 N74-13205  
Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c 35 N74-26946  
Measuring probe position recorder  
[NASA-CASE-LAR-10806-1] c 35 N74-32877

**RECOVERABILITY**  
Ejectable underwater sound source recovery assembly  
[NASA-CASE-LAR-10595-1] c 35 N74-16135

**RECOVERABLE LAUNCH VEHICLES**  
Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176  
Orbiter/launch system  
[NASA-CASE-LAR-12250-1] c 14 N81-26161

**RECOVERABLE SPACECRAFT**  
Space capsule ejection assembly Patent  
[NASA-CASE-XMF-03169] c 31 N71-15675

**RECOVERY PARACHUTES**  
Vehicle parachute and equipment jettison system Patent  
[NASA-CASE-XLA-00195] c 02 N70-38009  
Vortex breach high pressure gas generator  
[NASA-CASE-LAR-10549-1] c 31 N73-13898

**RECTANGULAR PANELS**  
Stacked solar cell arrays  
[NASA-CASE-NPO-11771] c 03 N73-20040  
Composite sandwich lattice structure  
[NASA-CASE-LAR-11898-1] c 24 N78-10214

**RECTIFIERS**  
Thin window, drifted silicon, charged particle detector  
[NASA-CASE-XLE-10529] c 14 N69-23191  
Power control circuit  
[NASA-CASE-XNP-02713] c 10 N69-39888  
Precision rectifier with FET switching means Patent  
[NASA-CASE-ARC-10101-1] c 09 N71-33109  
SCR lamp driver  
[NASA-CASE-GSC-10221-1] c 09 N72-23171  
A dc to ac to dc converter having transistor synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c 09 N72-25253  
Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393

**RECTUM**  
Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

**REDOX CELLS**  
Zirconium carbide as an electrocatalyst for the chromous/chromic redox couple  
[NASA-CASE-LEW-13246-1] c 25 N81-26203  
Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524  
Improved chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N82-22672

**REDUCED GRAVITY**  
Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988

Mass measuring system Patent  
[NASA-CASE-XMS-03371] c 05 N70-42000  
Reduced gravity simulator Patent  
[NASA-CASE-XLA-01787] c 11 N71-16028  
Restraint system for ergometer  
[NASA-CASE-MFS-21046-1] c 14 N73-27377  
Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

**REDUCTION (CHEMISTRY)**  
Production of metal powders  
[NASA-CASE-XLE-06461] c 17 N72-22530  
Process for making anhydrous metal halides  
[NASA-CASE-LEW-11860-1] c 37 N76-18458  
Curable liquid hydrocarbon prepolymers containing hydroxyl groups and process for producing same  
[NASA-CASE-NPO-13137-1] c 27 N80-32514

**REDUNDANCY**  
Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013

**REDUNDANT COMPONENTS**  
Redundant memory organization Patent  
[NASA-CASE-GSC-10564] c 10 N71-29135  
Redundant disc  
[NASA-CASE-LEW-12496-1] c 07 N78-33101  
Redundant motor drive system  
[NASA-CASE-MFS-23777-1] c 37 N80-32716  
Redundant operation of counter modules  
[NASA-CASE-NPO-14162-1] c 60 N81-15706

**REELS**  
Method and apparatus for measuring web material wound on a reel  
[NASA-CASE-GSC-11902-1] c 38 N77-17495

**REENTRY COMMUNICATION**  
Electrostatic plasma modulator for space vehicle re-entry communication Patent  
[NASA-CASE-XLA-01400] c 07 N70-41331  
Means for communicating through a layer of ionized gases Patent  
[NASA-CASE-XLA-01127] c 07 N70-41372  
Reentry communication by material addition Patent  
[NASA-CASE-XLA-01552] c 07 N71-11284

**REENTRY SHIELDING**  
Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075  
Method and apparatus for making a heat insulating and ablative structure Patent  
[NASA-CASE-XMS-02009] c 33 N71-20834  
Stand-off type ablative heat shield  
[NASA-CASE-MSC-12143-1] c 33 N72-17947  
Protected isotope heat source — for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876  
Fibrous refractory composite insulation — shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062  
Adjustable high emittance gap filler — reentry shielding for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339  
Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520

**REENTRY TRAJECTORIES**  
Hypersonic reentry vehicle Patent  
[NASA-CASE-XMS-04142] c 31 N70-41631

**REENTRY VEHICLES**  
Reentry vehicle leading edge Patent  
[NASA-CASE-XLA-00165] c 31 N70-33242  
Variable-geometry winged reentry vehicle Patent  
[NASA-CASE-XLA-00241] c 31 N70-37986  
Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699  
Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991  
Ring wing tension vehicle Patent  
[NASA-CASE-XLA-04901] c 31 N71-24315  
Ferry system  
[NASA-CASE-LAR-10574-1] c 11 N73-13257  
Vortex breach high pressure gas generator  
[NASA-CASE-LAR-10549-1] c 31 N73-13898  
Three-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c 27 N76-23426

**REFERENCE SYSTEMS**  
Automatic frequency control loop including synchronous switching circuits  
[NASA-CASE-KSC-10393] c 09 N72-21247  
Magnetic heading reference  
[NASA-CASE-LAR-11387-2] c 04 N77-19056

**REFINING**  
Helium refining by superfluidity Patent  
[NASA-CASE-XNP-00733] c 06 N70-34946

**REFLECTANCE**  
Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c 23 N71-16365  
Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587



- Optical mirror apparatus Patent  
[NASA-CASE-ERC-10001] c 23 N71-24868
- REFLECTED WAVES**  
Device and method for determining X ray reflection efficiency of optical surfaces  
[NASA-CASE-MFS-20243] c 23 N73-13662  
Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028  
Reflected-wave maser — low noise amplifier  
[NASA-CASE-NPO-13490-1] c 36 N76-31512
- REFLECTING TELESCOPES**  
Anastigmatic three-mirror telescope  
[NASA-CASE-MFS-23675-1] c 89 N79-10969
- REFLECTION**  
Synthesis of zinc titanate pigment and coatings containing the same  
[NASA-CASE-MFS-13532] c 18 N72-17532  
Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector — for determining density of gas  
[NASA-CASE-ARC-10631-1] c 74 N76-20958
- REFLECTOMETERS**  
Ellipsoidal mirror reflectometer including means for averaging the radiation reflected from the sample  
Patent  
[NASA-CASE-XGS-05291] c 23 N71-16341  
Real time reflectometer — measurement of specular reflectance  
[NASA-CASE-MFS-23118-1] c 35 N77-31465  
Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443  
Visible and infrared polarization ratio spectrophotometer  
[NASA-CASE-LAR-12285-1] c 35 N80-26687
- REFLECTORS**  
Reflector space satellite Patent  
[NASA-CASE-XLA-00138] c 31 N70-37981  
Self-erecting reflector Patent  
[NASA-CASE-XGS-09190] c 31 N71-16102  
Spectroscope equipment using a slender cylindrical reflector as a substitute for a slit Patent  
[NASA-CASE-XGS-08269] c 23 N71-26206  
Conical reflector antenna  
[NASA-CASE-NPO-10303] c 07 N72-22127  
Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c 10 N72-22235  
Multi-purpose antenna employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c 07 N72-25174  
Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130  
Non-tracking solar energy collector system  
[NASA-CASE-NPO-13813-1] c 44 N78-31526  
Acoustic suspension system  
[NASA-CASE-NPO-15435-1] c 71 N81-27887  
Heat reflecting field stop  
[NASA-CASE-LAR-12443-1] c 74 N82-19030
- REFRACTIVITY**  
The 2 deg/90 deg laboratory scattering photometer — particulate refractivity in hydrosols  
[NASA-CASE-GSC-12088-1] c 74 N78-13874  
Chromatically corrected virtual image visual display — reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185  
Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N81-19440
- REFRACTORY COATINGS**  
Refractory coatings and method of producing the same  
[NASA-CASE-LEW-13169-1] c 26 N82-29415  
Refractory coatings  
[NASA-CASE-LEW-13169-2] c 26 N82-30371  
Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520
- REFRACTORY MATERIALS**  
High temperature testing apparatus Patent  
[NASA-CASE-XLE-00335] c 14 N70-35368  
Prestressed refractory structure Patent  
[NASA-CASE-XNP-02888] c 18 N71-21068  
Method of manufacturing semiconductor devices using refractory dielectrics  
[NASA-CASE-XER-08476-1] c 26 N72-17820  
High temperature furnace for melting materials in space  
[NASA-CASE-MFS-20710] c 11 N72-23215  
High temperature resistant cermet and ceramic compositions — for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302  
High temperature resistant cermet and ceramic compositions  
[NASA-CASE-NPO-13690-2] c 27 N79-14213

- Fibrous refractory composite insulation — shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062  
Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307  
Improved refractory coatings — sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209  
Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MSC-18791-1] c 37 N81-24446  
Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18737-1] c 25 N81-29180  
Method of repairing surface damage to porous refractory substrates — shuttle orbiter tiles  
[NASA-CASE-MSC-18736-1] c 27 N81-29231  
Castable high temperature refractory materials  
[NASA-CASE-LEW-13080-2] c 27 N82-11210  
Adjustable high emittance gap filler — reentry shielding for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339  
High temperature silicon carbide impregnated insulating fabrics — filling the gaps between space shuttle tiles  
[NASA-CASE-MSC-18832-1] c 24 N82-26388  
Attachment system for silica tiles — thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456
- REFRACTORY METALS**  
Radiant heater having formed filaments Patent  
[NASA-CASE-XLE-00387] c 33 N70-34812  
Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468  
Multilayer porous ionizer Patent  
[NASA-CASE-XNP-04338] c 17 N71-23046  
Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365  
Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145  
Method of producing refractory composites containing tantalum carbide, hafnium carbide, and hafnium boride Patent  
[NASA-CASE-XLE-03940] c 18 N71-26153  
Silicide coatings for refractory metals Patent  
[NASA-CASE-XLE-10910] c 18 N71-29040  
Refractory metal base alloy composites  
[NASA-CASE-XLE-03940-2] c 17 N72-28536  
Fused silicide coatings containing discrete particles for protecting niobium alloys — used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229  
Method of making an apertured casting — using duplicate mold  
[NASA-CASE-LEW-11169-1] c 37 N76-23570
- REFRIGERATING**  
Helium refrigerator and method for decontaminating the refrigerator  
[NASA-CASE-NPO-10634] c 23 N72-25619  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N82-24449
- REFRIGERATING MACHINERY**  
Refrigeration apparatus  
[NASA-CASE-NPO-10309] c 15 N69-23190  
Refrigeration apparatus Patent  
[NASA-CASE-XNP-08877] c 15 N71-23025  
Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725  
Stirling cycle engine and refrigeration systems  
[NASA-CASE-NPO-13613-1] c 37 N76-29590  
A cycling Joule Thomson refrigerator  
[NASA-CASE-NPO-15251-1] c 31 N81-19344
- REFRIGERATORS**  
Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906  
Helium refrigerator  
[NASA-CASE-NPO-13435-1] c 31 N76-14284  
Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029  
Refrigerator module, system and process — regenerative, cryogenic cooling of an infrared radiation detection system  
[NASA-CASE-ARC-11263-1] c 31 N81-27328
- REGENERATION (ENGINEERING)**  
Switching circuit employing regeneratively connected complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032  
Regenerative braking system Patent  
[NASA-CASE-XMF-01096] c 10 N71-16030  
Free-piston regenerative hot gas hydraulic engine  
[NASA-CASE-LEW-12274-1] c 37 N80-31790

- REGENERATION (PHYSIOLOGY)**  
Implantable electrical device  
[NASA-CASE-GSC-12560-1] c 52 N82-29863
- REGENERATIVE COOLING**  
Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411  
Method of making a regeneratively cooled combustion chamber Patent  
[NASA-CASE-XLE-00150] c 28 N70-41818  
Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41992  
Combustion chamber Patent  
[NASA-CASE-XLE-04857] c 28 N71-23968  
Method of making apparatus for sensing temperature  
[NASA-CASE-XLE-05230-2] c 14 N73-13417  
Refrigerator module, system and process — regenerative, cryogenic cooling of an infrared radiation detection system  
[NASA-CASE-ARC-11263-1] c 31 N81-27328
- REGENERATIVE FUEL CELLS**  
Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c 03 N71-11052
- REGENERATORS**  
Code regenerative clean-up loop transponder for a mu-type ranging system  
[NASA-CASE-NPO-11707] c 07 N73-25161  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N82-24449
- REGISTERS (COMPUTERS)**  
Variable digital processor including a register for shifting and rotating bits in either direction Patent  
[NASA-CASE-GSC-10186] c 08 N71-33110  
Priority interrupt system — comprised of four registers  
[NASA-CASE-NPO-13067-1] c 60 N76-18800
- REINFORCED PLASTICS**  
Tube fabricating process  
[NASA-CASE-LAR-10203-1] c 15 N72-16330  
Reinforced structural plastics  
[NASA-CASE-LEW-10199-1] c 27 N74-23125
- REINFORCEMENT (STRUCTURES)**  
Reinforcing means for diaphragms Patent  
[NASA-CASE-XNP-01962] c 32 N70-41370
- REINFORCING FIBERS**  
Reinforced metallic composites Patent  
[NASA-CASE-XLE-02428] c 17 N70-33288  
Method of making fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-00231] c 17 N70-38198  
Method for producing fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-03925] c 18 N71-22894  
Thermal protection ablation spray system Patent  
[NASA-CASE-XLA-04251] c 18 N71-26100  
Method of preparing graphite reinforced aluminum composite  
[NASA-CASE-MFS-21077-1] c 24 N75-28135  
Crystalline polyimides — reinforcing fibers for high temperature composites and adhesives as well as flame retardation  
[NASA-CASE-LAR-12099-1] c 27 N80-16158  
Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-19296  
High modulus rare earth and beryllium containing silicate glass compositions — for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455
- RELAXATION OSCILLATORS**  
Voltage to frequency converter Patent  
[NASA-CASE-GSC-10022-1] c 10 N71-25882
- RELAY SATELLITES**  
Satellite communication system and method Patent  
[NASA-CASE-GSC-10118-1] c 07 N71-24621  
Satellite personal communications system  
[NASA-CASE-NPO-14480-1] c 32 N80-20448
- RELEASING**  
Despin weight release Patent  
[NASA-CASE-XLA-00679] c 15 N70-38601  
Quick attach and release fluid coupling assembly Patent  
[NASA-CASE-XKS-01985] c 15 N71-10782  
Redundant actuating mechanism Patent  
[NASA-CASE-XGS-08718] c 15 N71-24600  
Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975  
Delayed simultaneous release mechanism  
[NASA-CASE-GSC-10814-1] c 03 N73-20039
- RELIABILITY ANALYSIS**  
Program for computer aided reliability estimation  
[NASA-CASE-NPO-13086-1] c 15 N73-12495
- RELIABILITY ENGINEERING**  
Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-16052  
Inspection gage for boss Patent  
[NASA-CASE-XMF-04966] c 14 N71-17658



Valving device for automatic refilling in cryogenic liquid systems  
[NASA-CASE-NPO-11177] c 15 N72-17453

Electrical connector  
[NASA-CASE-NPO-10694] c 09 N72-20200

Inherent redundancy electric heater  
[NASA-CASE-MFS-21462-1] c 33 N74-14935

Hollow rolling element bearings  
[NASA-CASE-LEW-11087-3] c 37 N74-21064

Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013

**RELIEF VALVES**

Relief valve  
[NASA-CASE-XMS-05894-1] c 15 N69-21924

Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968

Redundant hydraulic control system for actuators  
[NASA-CASE-MFS-20944] c 15 N73-13466

Prosthetic urinary sphincter  
[NASA-CASE-MFS-23717-1] c 52 N81-25660

Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N81-27786

**REMOTE CONTROL**

Electromagnetic mirror drive system  
[NASA-CASE-XLA-03724] c 14 N69-27461

Tubular coupling having frangible connecting means  
[NASA-CASE-XLA-02854] c 15 N69-27490

Bimetallic power controlled actuator  
[NASA-CASE-XNP-09776] c 09 N69-39929

Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492

Umbilical disconnect Patent  
[NASA-CASE-XLA-00711] c 03 N71-12258

Remote controlled tubular disconnect Patent  
[NASA-CASE-XLA-01396] c 03 N71-12259

Three-axis finger tip controller for switches Patent  
[NASA-CASE-XAC-02405] c 09 N71-16089

Satellite communication system Patent  
[NASA-CASE-XNP-02389] c 07 N71-28900

Method and apparatus for aligning a laser beam projector Patent  
[NASA-CASE-NPO-11087] c 23 N71-29125

Solid state remote circuit selector switch  
[NASA-CASE-LEW-10387] c 09 N72-22201

Laser communication system for controlling several functions at a location remote to the laser  
[NASA-CASE-LAR-10311-1] c 16 N73-16536

Cooperative multitax sensor for teleoperation of article manipulating apparatus  
[NASA-CASE-NPO-13386-1] c 54 N75-27758

Remotely operable articulated manipulator  
[NASA-CASE-MFS-22707-1] c 37 N76-15457

Remote manipulator system  
[NASA-CASE-MFS-22022-1] c 37 N76-15460

Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315

Simulator method and apparatus for practicing the mating of an observer-controlled object with a target  
[NASA-CASE-MFS-23052-2] c 74 N79-13855

Terminal guidance sensor system  
[NASA-CASE-NPO-14521-1] c 54 N79-20746

Tactile sensing system --- manipulator controllers  
[NASA-CASE-NPO-15094-1] c 33 N81-16386

Terminal guidance sensor system --- space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519

Apparatus for releasably connecting first and second objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 15 N82-28318

**REMOTE HANDLING**

Remote control manipulator for zero gravity environment  
[NASA-CASE-MFS-14405] c 15 N72-28495

Apparatus for remote handling of materials --- mixing or analyzing dangerous chemicals  
[NASA-CASE-LAR-10634-1] c 37 N74-18123

Anthropomorphic master/slave manipulator system  
[NASA-CASE-ARC-10756-1] c 54 N77-32721

Controller arm for a remotely related slave arm  
[NASA-CASE-ARC-11052-1] c 37 N79-28551

Apparatus for sequentially transporting containers  
[NASA-CASE-MFS-23846-1] c 37 N82-32731

**REMOTE MANIPULATOR SYSTEM**

Coupling device for moving vehicles  
[NASA-CASE-GSC-12322-1] c 37 N80-14398

**REMOTE SENSING**

Method and apparatus for Delta K synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N82-28502

**REMOTE SENSORS**

Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c 20 N71-16340

Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090

Flow angle sensor and read out system Patent  
[NASA-CASE-XLE-04503] c 14 N71-24864

Time synchronization system utilizing moon reflected coded signals Patent  
[NASA-CASE-NPO-10143] c 10 N71-26326

Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437

Intruder detection system  
[NASA-CASE-ARC-10097-2] c 07 N73-25160

Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c 44 N74-19870

Voltage monitoring system  
[NASA-CASE-KSC-10738-1] c 33 N75-19521

Wind sensor  
[NASA-CASE-NPO-13462-1] c 35 N76-24524

Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493

Wind measurement system  
[NASA-CASE-MFS-23362-1] c 47 N77-10753

Penetrometer --- for determining load bearing characteristics of inclined surfaces  
[NASA-CASE-NPO-11103-1] c 35 N77-27367

Remote sensing of vegetation and soil using microwave ellipsometry  
[NASA-CASE-GSC-11976-1] c 43 N78-10529

Remote water monitoring system  
[NASA-CASE-LAR-11973-1] c 35 N78-27384

Radar target for remotely sensing hydrological phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498

**REMOTELY PILOTED VEHICLES**

Rotating launch device for a remotely piloted aircraft  
[NASA-CASE-ARC-10979-1] c 09 N77-19076

**REMOVAL**

Catalyst bed removing tool Patent  
[NASA-CASE-XFR-00811] c 15 N70-36901

Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

Acoustic bubble removal  
[NASA-CASE-NPO-15334-1] c 37 N82-22497

**RENDEZVOUS GUIDANCE**

Apparatus for releasably connecting first and second objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 15 N82-28318

**REPEATERS**

Time division radio relay synchronizing system using different sync code words for in sync and out of sync conditions Patent  
[NASA-CASE-GSC-10373-1] c 07 N71-19773

**REPLACING**

Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent  
[NASA-CASE-NPO-10625] c 09 N71-26182

**RESCUE OPERATIONS**

Backpack camera Patent  
[NASA-CASE-LAR-10056] c 05 N71-12351

Rescue litter flotation assembly Patent  
[NASA-CASE-XMS-04170] c 05 N71-22748

Method of locating persons in distress --- by using radar imagery from radar reflectors  
[NASA-CASE-LAR-11390-1] c 32 N77-21267

**RESEARCH AND DEVELOPMENT**

Tube fabricating process  
[NASA-CASE-LAR-10203-1] c 15 N72-16330

**RESEARCH VEHICLES**

Lunar landing flight research vehicle Patent  
[NASA-CASE-XFR-00929] c 31 N70-34966

Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895

**RESIDUAL STRESS**

Miniature stress transducer Patent  
[NASA-CASE-XNP-02983] c 14 N71-21091

Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c 05 N72-25120

**RESILIENCE**

Resilience testing device Patent  
[NASA-CASE-XLA-08254] c 14 N71-26161

**RESIN BONDING**

Method and apparatus for bonding a plastics sleeve onto a metallic body Patent  
[NASA-CASE-XLA-01262] c 15 N71-21404

Covered silicon solar cells and method of manufacture --- with polymeric films  
[NASA-CASE-LEW-11065-2] c 44 N76-14600

Method of manufacture of bonded fiber flywheel --- fiberglass-epoxy  
[NASA-CASE-MFS-23674-1] c 24 N81-29163

**RESIN MATRIX COMPOSITES**

Phosphorus-containing bisimide resins  
[NASA-CASE-ARC-11321-1] c 27 N81-27272

**RESINS**

Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739

Bonding or repairing process  
[NASA-CASE-MSC-12357] c 15 N73-12489

Semiconductor surface protection material  
[NASA-CASE-ERC-10339-1] c 18 N73-30532

Composite lamination method  
[NASA-CASE-LAR-12019-1] c 24 N78-17150

Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N81-31364

**RESISTANCE**

Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c 05 N72-25120

Variable resistance constant tension and lubrication device --- using oil-saturated leather wiper  
[NASA-CASE-KSC-10723-1] c 37 N75-13265

**RESISTANCE HEATING**

Electrothermal rockets having improved heat exchangers Patent  
[NASA-CASE-XLE-01783] c 28 N70-34175

Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 33 N82-23396

**RESISTORS**

High isolation RF signal selection switches  
[NASA-CASE-NPO-13081-1] c 33 N74-22814

Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473

**RESOLUTION**

Analog-to-digital conversion system Patent  
[NASA-CASE-XAC-00404] c 08 N70-40125

Spectroscopy equipment using a slender cylindrical reflector as a substitute for a slit Patent  
[NASA-CASE-XGS-08269] c 23 N71-26206

Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753

**RESOLVERS**

Differential phase shift keyed signal resolver  
[NASA-CASE-MSC-14066-1] c 33 N74-27705

Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 32 N82-10287

Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716

**RESONANCE**

Optically selective, acoustically resonant gas detecting transducer  
[NASA-CASE-ARC-10639-1] c 35 N78-13400

Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N81-24426

**RESONANT FREQUENCIES**

Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c 09 N71-23021

Apparatus for detecting the amount of material in a resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397

Parasitic suppressing circuit  
[NASA-CASE-ERC-10403-1] c 10 N73-26228

CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512

Microbalance --- for measuring particle mass  
[NASA-CASE-MSC-11242] c 35 N78-17358

Method and apparatus for shaping and enhancing acoustical levitation forces  
[NASA-CASE-MFS-25050-1] c 71 N81-15767

Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N82-27087

**RESONANT VIBRATION**

Arrangement for damping the resonance in a laser diode  
[NASA-CASE-NPO-15980-1] c 36 N82-28618

**RESONATORS**

High-Q bandpass resonators utilizing bandstop resonator pairs  
[NASA-CASE-GSC-10990-1] c 09 N73-26195

**RESPIRATION**

Method and system for respiration analysis Patent  
[NASA-CASE-XFR-08403] c 05 N71-11202

**RESPIRATORS**

Respiration monitor  
[NASA-CASE-FRC-10012] c 14 N72-17329

**RESPIRATORY RATE**

Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546

Respiratory analysis system and method  
[NASA-CASE-MSC-13436-1] c 05 N73-32015

Metabolic analyzer --- for measuring metabolic rate and breathing dynamics of human beings  
[NASA-CASE-MFS-21415-1] c 52 N74-20728



Dual physiological rate measurement instrument  
[NASA-CASE-MSC-20078-1] c 52 N82-32971

**RESPIROMETERS**  
Metabolic analyzer — for measuring metabolic rate and breathing dynamics of human beings  
[NASA-CASE-MFS-21415-1] c 52 N74-20728

**RESPONSES**  
Frequency division multiplex technique  
[NASA-CASE-KSC-10521] c 07 N73-20176

**RESTARTABLE ROCKET ENGINES**  
Zero gravity starting means for liquid propellant motors Patent  
[NASA-CASE-XNP-01390] c 28 N70-41275  
Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41992

**RESUSCITATION**  
Resuscitation apparatus Patent  
[NASA-CASE-XMS-01115] c 05 N70-39922

**RETAINING**  
Floating nut retention system  
[NASA-CASE-MSC-16938-1] c 37 N80-23653  
Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N81-12422

**RETARDERS (DEVICES)**  
Thrust reverser for a long duct fan engine — for turbofan engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293

**RETARDING**  
Ablative resin Patent  
[NASA-CASE-XLE-05913] c 33 N71-14032

**RETICLES**  
Optical tracker having overlapping reticles on parallel axes Patent  
[NASA-CASE-XGS-05715] c 23 N71-16100  
Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c 21 N73-19630  
Star tracking reticles  
[NASA-CASE-GSC-11188-1] c 14 N73-32320  
Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c 74 N74-20008  
Star scanner — with a reticle with a pair of slits having differing separation  
[NASA-CASE-GSC-11569-1] c 89 N74-30886

**RETRACTABLE EQUIPMENT**  
Runway light Patent  
[NASA-CASE-XLA-00119] c 11 N70-33329  
Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701  
Retractable environmental seal  
[NASA-CASE-MFS-23646-1] c 37 N79-22474  
Antenna deployment mechanism for use with a spacecraft — extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183  
Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N81-24164  
CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690

**RETROFIRING**  
Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c 31 N69-27499  
Discrete local altitude sensing device Patent  
[NASA-CASE-XMS-03792] c 14 N70-41812

**RETROREFLECTION**  
Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c 14 N71-17662  
Over-under double-pass interferometer  
[NASA-CASE-NPO-13999-1] c 35 N78-18395  
Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510

**RETROREFLECTORS**  
Interferometer — high resolution  
[NASA-CASE-NPO-14448-1] c 74 N81-29963  
Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N82-33681

**RETROROCKET ENGINES**  
Steerable solid propellant rocket motor Patent  
[NASA-CASE-XNP-00234] c 28 N70-38645

**REUSABLE HEAT SHIELDING**  
High temperature glass thermal control structure and coating  
[NASA-CASE-ARC-11164-1] c 27 N82-10228

**REUSABLE SPACECRAFT**  
Recoverable single stage spacecraft booster Patent  
[NASA-CASE-XMF-01973] c 31 N70-41529  
Space shuttle vehicle and system  
[NASA-CASE-MSC-12433] c 31 N73-14854

**REUSE**  
Silica reusable surface insulation  
[NASA-CASE-ARC-10721-1] c 27 N76-22376  
Reusable thermal cycling clamp — holders for directional solidification experiments  
[NASA-CASE-LAR-12868-1] c 27 N82-18390

Reusable captive blind fastener  
[NASA-CASE-MSC-18742-1] c 37 N82-26673

**REVERSE OSMOSIS**  
Reverse osmosis membrane of high urea rejection properties — water purification  
[NASA-CASE-ARC-10980-1] c 27 N80-23452  
Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 27 N82-28444

**REVERSED FLOW**  
Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00170] c 15 N70-36412  
Reversible current control apparatus Patent  
[NASA-CASE-XLA-09371] c 10 N71-18724  
Positive locking check valve Patent  
[NASA-CASE-XMS-09310] c 15 N71-22706  
Reverse pitch fan with divided splitter  
[NASA-CASE-LEW-12760-1] c 07 N77-17059

**REYNOLDS NUMBER**  
Wind tunnel test section  
[NASA-CASE-MFS-20509] c 11 N72-17183

**REYNOLDS STRESS**  
System for measuring Reynolds in a turbulently flowing fluid — signal processing  
[NASA-CASE-ARC-10755-2] c 34 N76-27517

**RHENIUM**  
Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c 35 N77-32454

**RHEOMETERS**  
Viscosity measuring instrument  
[NASA-CASE-NPO-14501-1] c 35 N80-18357

**RIBBONS**  
Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411  
Forming tool for ribbon or wire  
[NASA-CASE-XLA-05966] c 15 N72-12408  
Twisted multifilament superconductor  
[NASA-CASE-LEW-11726-1] c 26 N73-26752  
Method of controlling defect orientation in silicon crystal ribbon growth  
[NASA-CASE-NPO-13918-1] c 76 N79-11920  
Solar array strip and a method for forming the same  
[NASA-CASE-NPO-13652-1] c 44 N79-17314  
Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 76 N79-23798  
Bonding machine for forming a solar array strip  
[NASA-CASE-NPO-13652-2] c 44 N79-24431  
Method for forming a solar array strip  
[NASA-CASE-NPO-13652-3] c 44 N80-14474  
Means for growing ribbon crystals without subjecting the crystals to thermal shock-induced strains  
[NASA-CASE-NPO-14288-1] c 76 N80-32244  
Method of growing a ribbon crystal particularly suited for facilitating automated control of ribbon width  
[NASA-CASE-NPO-14295-1] c 76 N80-32245  
Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389  
A method of increasing minority carrier lifetime in silicon web or the like — VLSI semiconductor devices and high performance solar cells  
[NASA-CASE-NPO-15530-1] c 76 N82-24993  
Process and apparatus for growing a crystal ribbon — for use in photovoltaic cells  
[NASA-CASE-NPO-15629-1] c 44 N82-26779

**RIBOFLAVIN**  
Flavin coenzyme assay  
[NASA-CASE-GSC-10565-1] c 06 N72-25149

**RIBS (SUPPORTS)**  
Aeroflexible structures  
[NASA-CASE-XLA-06095] c 01 N69-39981

**RICE**  
Modification of the physical properties of freeze-dried rice  
[NASA-CASE-MSC-13540-1] c 05 N72-33096

**RIDING QUALITY**  
Ride quality meter  
[NASA-CASE-LAR-12882-1] c 54 N81-31848

**RIGID ROTORS**  
Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c 05 N77-17029

**RIGID STRUCTURES**  
Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975  
Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-26155  
Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123  
Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040  
Telescoping columns — parabolic antenna support  
[NASA-CASE-LAR-12195-1] c 31 N81-27324

**RIGID WINGS**  
Flexible wing deployment device Patent  
[NASA-CASE-XLA-01220] c 02 N70-41863

**RIMS**  
Rim inertial measuring system  
[NASA-CASE-LAR-12052-1] c 18 N81-29152

**RING CURRENTS**  
Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463

**RING STRUCTURES**  
Reversible ring counter employing cascaded single SCR stages Patent  
[NASA-CASE-XGS-01473] c 09 N71-10673  
Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c 15 N71-22877  
Phase-locked servo system — for synchronizing the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c 33 N75-13139  
Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653  
Helmet latching and attaching ring  
[NASA-CASE-XMS-04670] c 54 N78-17678  
Collapsible corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539  
Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N81-12422  
Ladder supported ring bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N81-24348

**RING WINGS**  
Ring wing tension vehicle Patent  
[NASA-CASE-XLA-04901] c 31 N71-24315

**RIPPLES**  
Ripple indicator  
[NASA-CASE-KSC-10162] c 09 N72-11225

**RIVETS**  
Printed circuit board with bellows rivet connection Patent  
[NASA-CASE-XNP-05082] c 15 N70-41960

**ROCKET ENGINE CASES**  
Method of making a rocket motor casing Patent  
[NASA-CASE-XLE-00409] c 28 N71-15658  
Rocket motor casing Patent  
[NASA-CASE-XLE-05689] c 28 N71-15659  
Payload/burned-out motor case separation system Patent  
[NASA-CASE-XLA-05369] c 31 N71-15687  
Solid propellant liner Patent  
[NASA-CASE-XNP-09744] c 27 N71-16392  
Ion engine casing construction and method of making same Patent  
[NASA-CASE-XNP-06942] c 28 N71-23293  
Casting propellant in rocket engine  
[NASA-CASE-LAR-11995-1] c 28 N77-10213  
Solid propellant rocket motor and method of making same  
[NASA-CASE-XLA-1349] c 20 N77-17143

**ROCKET ENGINE CONTROL**  
Fluid thrust control system — for liquid propellant rocket engines  
[NASA-CASE-XMF-05964-1] c 20 N79-21124

**ROCKET ENGINE DESIGN**  
Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c 28 N70-33284  
Spherical solid-propellant rocket motor Patent  
[NASA-CASE-XLA-00105] c 28 N70-33331  
Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c 28 N70-35381  
Rocket engine Patent  
[NASA-CASE-XLE-00342] c 28 N70-37980  
Swirling flow nozzle Patent  
[NASA-CASE-XNP-03692] c 28 N71-24321  
Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783  
Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502  
Rocket chamber and method of making  
[NASA-CASE-LEW-11118-2] c 20 N76-14191  
System for imposing directional stability on a rocket-propelled vehicle  
[NASA-CASE-MFS-21311-1] c 20 N76-21275

**ROCKET ENGINES**  
Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860  
Ion thruster cathode Patent Application  
[NASA-CASE-LEW-10814-1] c 28 N70-35422  
Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535  
Elastic universal joint Patent  
[NASA-CASE-XNP-00416] c 15 N70-36947  
Passively regulated water electrolysis rocket engine Patent  
[NASA-CASE-XGS-08729] c 28 N71-14044  
Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01988] c 27 N71-15634



Laminar flow enhancement Patent  
[NASA-CASE-NPO-10122] c 12 N71-17631

Swirling flow nozzle Patent  
[NASA-CASE-XNP-03692] c 28 N71-24321

Thruster maintenance system Patent  
[NASA-CASE-MFS-20325] c 28 N71-27095

Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c 28 N71-28849

Method and device for cooling Patent  
[NASA-CASE-HQN-00938] c 33 N71-29053

Ion thruster magnetic field control  
[NASA-CASE-LEW-10835-1] c 28 N72-22771

Altitude simulation chamber for rocket engine testing  
[NASA-CASE-MFS-20620] c 11 N72-27262

Method of making apparatus for sensing temperature  
[NASA-CASE-XLE-05230-2] c 14 N73-13417

Magneto-plasma-dynamic arc thruster  
[NASA-CASE-LEW-11180-1] c 25 N73-25760

Method of electroforming a rocket chamber  
[NASA-CASE-LEW-11118-1] c 20 N74-32919

Device for installing rocket engines  
[NASA-CASE-MFS-19220-1] c 20 N76-22296

Ion beam thruster shield  
[NASA-CASE-LEW-12082-1] c 20 N77-10148

Anode for ion thruster  
[NASA-CASE-LEW-12048-1] c 20 N77-20162

General purpose rocket furnace  
[NASA-CASE-MFS-23460-1] c 12 N79-26075

Diffuser/ejector system for a very high vacuum environment  
[NASA-CASE-MFS-15791-1] c 37 N82-33712

**ROCKET EXHAUST**  
Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c 28 N70-34294

Rocket thrust throttling system  
[NASA-CASE-LEW-10374-1] c 28 N73-13773

**ROCKET FIRING**  
Alleviation of divergence during rocket launch Patent  
[NASA-CASE-XLA-00256] c 31 N71-15663

**ROCKET FLIGHT**  
Technique for control of free-flight rocket vehicles  
[NASA-CASE-XLA-00937] c 31 N71-17691

**ROCKET LAUNCHING**  
Alleviation of divergence during rocket launch Patent  
[NASA-CASE-XLA-00256] c 31 N71-15663

Controlled release device Patent  
[NASA-CASE-XKS-03338] c 15 N71-24043

**ROCKET LININGS**  
Heat exchanger and method of making --- rocket lining  
[NASA-CASE-LEW-12441-2] c 34 N80-24573

**ROCKET NOZZLES**  
Gimbaled, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c 28 N70-34162

Rocket thrust chamber Patent  
[NASA-CASE-XLE-00145] c 28 N70-36806

Self-sealing, unbonded, rocket motor nozzle closure Patent  
[NASA-CASE-XLA-02651] c 28 N70-41967

Automatically depressing nozzle exit cone extension  
[NASA-CASE-XLE-01640] c 31 N71-15637

Rocket nozzle test method Patent  
[NASA-CASE-NPO-10311] c 31 N71-15643

Collapsible nozzle extension for rocket engines Patent  
[NASA-CASE-MFS-11497] c 28 N71-16224

Apparatus and method for protecting a photographic device Patent  
[NASA-CASE-NPO-10174] c 14 N71-18465

Multislot film cooled pyrolytic graphite rocket nozzle  
[NASA-CASE-XNP-04389] c 28 N71-20942

Prestressed refractory structure Patent  
[NASA-CASE-XNP-02888] c 18 N71-21068

Swirling flow nozzle Patent  
[NASA-CASE-XNP-03692] c 28 N71-24321

Method and device for cooling Patent  
[NASA-CASE-HQN-00938] c 33 N71-29053

Inflatable transpiration cooled nozzle  
[NASA-CASE-MFS-20619] c 28 N72-11708

Solid propellant rocket motor nozzle  
[NASA-CASE-NPO-11458] c 28 N72-23810

Method of making a rocket nozzle  
[NASA-CASE-XMF-06884-1] c 20 N79-21123

Retractable environmental seal  
[NASA-CASE-MFS-23646-1] c 37 N79-22474

**ROCKET OXIDIZERS**  
Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11875-1] c 28 N74-33209

**ROCKET PROPELLANTS**  
Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c 15 N70-22192

Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736

Bipropellant injector  
[NASA-CASE-XNP-09461] c 28 N72-23809

**ROCKET TEST FACILITIES**  
High-vacuum condenser tank for ion rocket tests Patent  
[NASA-CASE-XLE-00168] c 11 N70-33278

Micro-pound extended range thrust stand Patent  
[NASA-CASE-GSC-10710-1] c 28 N71-27094

**ROCKET THRUST**  
Apparatus and method for control of a solid fueled rocket vehicle Patent  
[NASA-CASE-XNP-00217] c 28 N70-38181

Electrostatic thruster with improved insulators Patent  
[NASA-CASE-XLE-01902] c 28 N71-10574

Solid propellant rocket motor  
[NASA-CASE-NPO-11559] c 28 N73-24784

Thrust measurement  
[NASA-CASE-XMS-05731] c 35 N75-29382

**ROCKET VEHICLES**  
Umbilical separator for rockets Patent  
[NASA-CASE-XNP-00425] c 11 N70-38202

Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c 11 N70-41677

Alleviation of divergence during rocket launch Patent  
[NASA-CASE-XLA-00256] c 31 N71-15663

Technique for control of free-flight rocket vehicles Patent  
[NASA-CASE-XLA-00937] c 31 N71-17691

Coupling device for moving vehicles  
[NASA-CASE-GSC-12322-1] c 37 N80-14398

High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272

**ROCKET-BORNE INSTRUMENTS**  
Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432

**ROCKETS**  
Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum  
[NASA-CASE-MFS-13130] c 10 N72-17173

**ROCKS**  
Rock drill for recovering samples  
[NASA-CASE-XNP-07478] c 14 N69-21923

Rock sampling --- apparatus for controlling particle size  
[NASA-CASE-XNP-10007-1] c 46 N74-23068

Rock sampling --- method for controlling particle size distribution  
[NASA-CASE-XNP-09755] c 46 N74-23069

Coal-rock interface detector  
[NASA-CASE-MFS-23725-1] c 43 N79-31706

**RODS**  
Nuclear thermionic converter --- tungsten-thorium oxide rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891

**ROLL**  
Roll alignment detector  
[NASA-CASE-GSC-10514-1] c 14 N72-20379

**ROLLER BEARINGS**  
Method of lubricating rolling element bearings Patent  
[NASA-CASE-XLE-09527] c 15 N71-17688

Semi-linear ball bearing Patent  
[NASA-CASE-XLA-02809] c 15 N71-22982

Low mass rolling element for bearings  
[NASA-CASE-LEW-11087-1] c 15 N73-30458

Method of making rolling element bearings  
[NASA-CASE-LEW-11087-2] c 37 N74-15128

Bearing material --- composite material with low friction surface for rolling or sliding contact  
[NASA-CASE-LEW-11930-1] c 24 N76-22309

**ROLLERS**  
Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-16052

Load regulating latch  
[NASA-CASE-MSC-19535-1] c 37 N77-32499

Suspension system for a wheel rolling on a flat track --- bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587

**ROLLING CONTACT LOADS**  
Rolling element bearings Patent  
[NASA-CASE-XLE-09527-2] c 15 N71-26189

**ROLLING MOMENTS**  
Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c 21 N70-41856

Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-1] c 05 N82-25240

**ROOM TEMPERATURE**  
Coating process  
[NASA-CASE-XNP-06508] c 18 N69-39895

**ROTARY STABILITY**  
Reactance control system Patent  
[NASA-CASE-XMF-01598] c 21 N71-15583

Two component bearing Patent  
[NASA-CASE-XLA-00013] c 15 N71-29136

Lubricated journal bearing  
[NASA-CASE-LEW-11076-3] c 37 N75-30562

Cyclical bi-directional rotary actuator  
[NASA-CASE-GSC-11883-1] c 37 N77-19458

Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N81-22358

Family of airfoil shapes for rotating blades --- for increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 05 N82-33372

**ROTARY WING AIRCRAFT**  
Aircraft control system  
[NASA-CASE-ERC-10439] c 02 N73-19004

**ROTARY WINGS**  
Variable geometry rotor system  
[NASA-CASE-LAR-10557] c 02 N72-11018

Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c 05 N77-17029

Locking redundant link  
[NASA-CASE-LAR-11900-1] c 37 N79-14382

Helicopter rotor airfoil  
[NASA-CASE-LAR-12396-1] c 02 N79-24958

Acoustically swept rotor --- helicopter noise reduction  
[NASA-CASE-ARC-11106-1] c 05 N80-14107

Compensating linkage for main rotor control  
[NASA-CASE-LAR-11797-1] c 05 N81-19087

Family of airfoil shapes for rotating blades --- for increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 05 N82-33372

**ROTATING BODIES**  
Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485

Laser apparatus for removing material from rotating objects Patent  
[NASA-CASE-MFS-11279] c 16 N71-20400

Phase-locked servo system --- for synchronizing the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c 33 N75-13139

Annular momentum control device used for stabilization of space vehicles and the like  
[NASA-CASE-LAR-11051-1] c 15 N76-14158

Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c 37 N76-18459

Multiple in-line docking capability for rotating space stations  
[NASA-CASE-MFS-20855-1] c 15 N77-10112

Rotatable mass for a flywheel  
[NASA-CASE-MFS-23051-1] c 37 N79-10422

Acoustic driving of rotor  
[NASA-CASE-NPO-14005-1] c 71 N79-20827

Rotary target V-block --- aligning wind tunnel apparatus for optical measurement  
[NASA-CASE-LAR-12007-2] c 74 N79-25876

Multi-channel rotating optical interface for data transmission  
[NASA-CASE-NPO-14066-1] c 74 N79-34011

Rhomboid prism pair for rotating the plane of parallel light beams --- laser velocimeters  
[NASA-CASE-ARC-11311-1] c 74 N81-16882

Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N81-22358

**ROTATING CYLINDERS**  
Tread drum for animals --- having an electrical shock station  
[NASA-CASE-ARC-10917-1] c 51 N78-27733

**ROTATING CYLINDERS**  
Head for high speed spinner having a vacuum chuck --- holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482

**ROTATING DISKS**  
Foil seal  
[NASA-CASE-XLE-05130] c 15 N69-21362

Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432

Redundant disc  
[NASA-CASE-LEW-12496-1] c 07 N78-33101

**ROTATING ELECTRICAL MACHINES**  
Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479

Direct current motor with stationary armature and field Patent  
[NASA-CASE-XGS-05290] c 09 N71-25999

Constant frequency output two stage induction machine systems Patent  
[NASA-CASE-ERC-10065] c 09 N71-27364

**ROTATING ENVIRONMENTS**  
Radial module space station Patent  
[NASA-CASE-XMS-01906] c 31 N70-41373

Rotating space station simulator Patent  
[NASA-CASE-XLA-03127] c 11 N71-10776



ROTATING GENERATORS

- Rotating raster generator [NASA-CASE-FRC-10071-1] c 32 N74-20813
- Wind wheel electric power generator [NASA-CASE-MFS-23515-1] c 44 N80-21828
- Wingtip vortex turbine [NASA-CASE-LAR-12544-1] c 07 N81-27096

ROTATING MIRRORS

- Retrodirective modulator Patent [NASA-CASE-GSC-10062] c 14 N71-15605
- Attitude sensor for space vehicles Patent [NASA-CASE-XLA-00793] c 21 N71-22880
- Method for generating ultra-precise angles Patent [NASA-CASE-XGS-04173] c 19 N71-26674
- Method and apparatus for optically monitoring the angular position of a rotating mirror [NASA-CASE-GSC-11353-1] c 74 N74-21304

ROTATING SHAFTS

- Foil seal Patent [NASA-CASE-XLE-05130-2] c 15 N71-19570
- Anemometer with braking mechanism Patent [NASA-CASE-XMF-05224] c 14 N71-23726
- Detent servo motor Patent [NASA-CASE-XNP-06936] c 15 N71-24695
- Rotating shaft seal Patent [NASA-CASE-XNP-02862-1] c 15 N71-26294
- Two component bearing Patent [NASA-CASE-XLA-00013] c 15 N71-29136
- Hall effect transducer [NASA-CASE-LAR-10620-1] c 09 N72-25255
- Spiral groove seal --- for rotating shaft [NASA-CASE-XLE-10326-4] c 37 N74-15125
- Digital servo controller --- for rotating antenna shaft [NASA-CASE-KSC-10769-1] c 33 N74-29556
- Solid medium thermal engine [NASA-CASE-ARC-10461-1] c 44 N74-33379
- Ergometer calibrator --- for any ergometer utilizing rotating shaft [NASA-CASE-MFS-21045-1] c 35 N75-15932
- Fluid seal for rotating shafts [NASA-CASE-LEW-11676-1] c 37 N76-22541
- Cyclical bi-directional rotary actuator [NASA-CASE-GSC-11883-1] c 37 N77-19458
- Tachometer [NASA-CASE-MFS-23175-1] c 35 N77-30436
- Rotary leveling base platform [NASA-CASE-ARC-10981-1] c 37 N78-27425
- Rotary electric device [NASA-CASE-GSC-12138-1] c 33 N79-20314
- Circumferential shaft seal [NASA-CASE-LEW-12119-1] c 37 N80-28711
- Multiple plate hydrostatic viscous damper [NASA-CASE-LEW-12445-1] c 37 N81-22360
- Clutchless multiple drive source for output shaft [NASA-CASE-ARC-11325-1] c 37 N82-22496
- Unitary seal ring assembly --- cryogenic applications [NASA-CASE-MFS-25678-1] c 37 N82-25517
- Magnetic bearing and motor [NASA-CASE-GSC-12725-1] c 37 N82-29603
- Directional gear ratio transmission [NASA-CASE-LAR-12644-1] c 37 N82-29605

ROTATION

- Semi-linear ball bearing Patent [NASA-CASE-XLA-02809] c 15 N71-22982
- Mechanical actuator Patent [NASA-CASE-XGS-04548] c 15 N71-24045
- Positioning mechanism [NASA-CASE-NPO-10679] c 15 N72-21462
- Systems for controlled acoustic rotation of objects [NASA-CASE-NPO-15522-1] c 71 N82-11861
- Acoustic rotation control [NASA-CASE-NPO-15689-1] c 35 N82-24475
- Spray coating apparatus having a rotatable workpiece holder [NASA-CASE-ARC-11110-1] c 37 N82-24492

ROTOR AERODYNAMICS

- Acoustically swept rotor --- helicopter noise reduction [NASA-CASE-ARC-11106-1] c 05 N80-14107

ROTOR BLADES

- Non-destructive method for applying and removing instrumentation on helicopter rotor blades [NASA-CASE-LAR-11201-1] c 35 N78-24515
- Apparatus and method for reducing thermal stress in a turbine rotor [NASA-CASE-LEW-12232-1] c 07 N79-10057

ROTOR BLADES (TURBOMACHINERY)

- Locking device for turbine rotor blades Patent [NASA-CASE-XNP-00816] c 28 N71-28928
- Turbo-machine blade vibration damper Patent [NASA-CASE-XLE-00155] c 28 N71-29154
- Apparatus for welding blades to rotors [NASA-CASE-LEW-10533-2] c 37 N74-11300
- Supersonic fan blading --- noise reduction in turbofan engines [NASA-CASE-LEW-11402-1] c 07 N74-28226

- Blade retainer assembly [NASA-CASE-LEW-12608-1] c 07 N77-27116
- Platform for a swing root turbomachinery blade [NASA-CASE-LEW-12312-1] c 07 N77-32148
- Helicopter rotor airfoil [NASA-CASE-LAR-12396-1] c 02 N79-24958

ROTOR LIFT

- Constant lift rotor for a heavier than air craft [NASA-CASE-ARC-11045-1] c 05 N79-17847

ROTOR SPEED

- Brushless direct current tachometer Patent [NASA-CASE-MFS-20385] c 09 N71-24904
- Improved method for driving two-phase turbines with enhanced efficiency [NASA-CASE-NPO-15037-1] c 37 N80-26660

ROTORCRAFT AIRCRAFT

- Constant lift rotor for a heavier than air craft [NASA-CASE-ARC-11045-1] c 05 N79-17847

ROTORS

- Multistage multiple-reentry turbine Patent [NASA-CASE-XLE-00085] c 28 N70-39895
- Angular position and velocity sensing apparatus Patent [NASA-CASE-XGS-05680] c 14 N71-17585
- Indexing microwave switch Patent [NASA-CASE-XNP-06507] c 09 N71-23548
- Detent servo motor Patent [NASA-CASE-XNP-06936] c 15 N71-24695
- Rotary vane attenuator when rotor has orthogonally disposed resistive and dielectric cards [NASA-CASE-NPO-11418-1] c 14 N73-13420
- Welding blades to rotors [NASA-CASE-LEW-10533-1] c 15 N73-28515
- Magnetic field control --- electromechanical torquing device [NASA-CASE-MFS-23828-1] c 33 N82-26569

RUBBER

- Thermoplastic rubber comprising ethylene-vinyl acetate copolymer, asphalt and fluxing oil [NASA-CASE-NPO-08835-1] c 27 N78-33228
- Formulated plastic separators for soluble electrode cells --- rubber-ion transport membranes [NASA-CASE-LEW-12358-1] c 44 N79-17313
- Enhancement of in vitro Guayule propagation [NASA-CASE-NPO-15213-1] c 51 N81-29728

RUBBER COATINGS

- Intumescent paint containing nitrile rubber [NASA-CASE-ARC-10196-1] c 18 N73-13562

RUBY

- Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide [NASA-CASE-GSC-11577-1] c 37 N75-15992
- Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide [NASA-CASE-GSC-11577-3] c 24 N79-25143

RUBY LASERS

- Laser coolant and ultraviolet filter [NASA-CASE-MFS-20180] c 16 N72-12440
- Method of and apparatus for double-exposure holographic interferometry [NASA-CASE-MFS-25405-1] c 35 N81-27459

RUNWAY ALIGNMENT

- Magnetic position detection method and apparatus [NASA-CASE-ARC-10178-1] c 21 N72-22619

RUNWAY LIGHTS

- Runway light Patent [NASA-CASE-XLA-00119] c 11 N70-33329
- Spectrally balanced chromatic landing approach lighting system [NASA-CASE-ARC-10990-1] c 04 N82-16059

RUPTURING

- Means for controlling rupture of shock tube diaphragms Patent [NASA-CASE-XAC-00731] c 11 N71-15960

RYDBERG SERIES

- A low energy electron magnetometer [NASA-CASE-LAR-12706-1] c 35 N81-19428

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SABOT PROJECTILES

- Hypervelocity gun --- using both electric and chemical energy for projectile propulsion [NASA-CASE-XLE-03186-1] c 09 N79-21084

SAFETY DEVICES

- Pressure suit be-down mechanism Patent [NASA-CASE-XMS-00784] c 05 N71-12335
- Positive locking check valve Patent [NASA-CASE-XMS-09310] c 15 N71-22706
- Protective device for machine and metalworking tools Patent [NASA-CASE-XLE-01092] c 15 N71-22797
- Velocity limiting safety system Patent [NASA-CASE-XLA-07473] c 15 N71-24895

- Combustion products generating and metering device [NASA-CASE-GSC-11095-1] c 14 N72-10375
- Restraint torso for a pressurized suit [NASA-CASE-MSC-12397-1] c 05 N72-25119
- Totally confined explosive welding --- apparatus to reduce noise level and protect personnel during explosive bonding [NASA-CASE-LAR-10941-1] c 37 N74-21057
- Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft [NASA-CASE-LAR-10753-1] c 08 N74-30421
- Shoulder harness and lap belt restraint system [NASA-CASE-ARC-10519-2] c 05 N75-25915
- Fifth wheel [NASA-CASE-FRC-10081-1] c 37 N77-14477
- Microwave power transmission beam safety system [NASA-CASE-NPO-14224-1] c 33 N80-18287
- Safety shield for vacuum/pressure chamber viewing port [NASA-CASE-GSC-12513-1] c 31 N81-19343
- Variable response load limiting device --- for aircraft seats [NASA-CASE-LAR-12801-1] c 37 N82-20544

SAFETY FACTORS

- Safety flywheel --- using flexible materials energy storage [NASA-CASE-HQN-10888-1] c 44 N79-14527

SAHA EQUATIONS

- Cosmic dust analyzer [NASA-CASE-MSC-13802-2] c 35 N76-15431

SALINITY

- Saltless solar pond [NASA-CASE-NPO-15808-1] c 44 N82-29714

SALT BATHS

- Process for applying a protective coating for salt bath brazing Patent [NASA-CASE-XLE-00046] c 15 N70-33311

SAMARIUM

- Gd or Sm doped silicon semiconductor composition Patent [NASA-CASE-XLE-10715] c 26 N71-23292

SAMPLERS

- Vacuum probe surface sampler [NASA-CASE-LAR-10623-1] c 14 N73-30395
- Method and device for destructive detection of a substance --- useful in determining the concentration of carbon fibers or pollutant particles [NASA-CASE-NPO-14940-1] c 35 N80-21723
- Mobile sampler for use in acquiring samples of terrestrial atmospheric gases [NASA-CASE-NPO-15220-1] c 35 N81-24414
- Automated syringe sampler --- remote sampling of air and water [NASA-CASE-LAR-12308-1] c 35 N81-29407

SAMPLES

- Plural output optometric sample cell and analysis system [NASA-CASE-NPO-10233-1] c 74 N78-33913

SAMPLING

- Sample collecting impact bit Patent [NASA-CASE-XNP-01412] c 15 N70-42034
- Fluid sample collector Patent [NASA-CASE-XMS-06767-1] c 14 N71-20435
- Atmospheric sampling devices [NASA-CASE-NPO-11373] c 13 N72-25323
- Digital to analog conversion apparatus [NASA-CASE-MSC-12458-1] c 08 N73-32081
- Rock sampling --- apparatus for controlling particle size [NASA-CASE-XNP-10007-1] c 46 N74-23068
- Rock sampling --- method for controlling particle size distribution [NASA-CASE-XNP-09755] c 46 N74-23069
- Apparatus for microbiological sampling --- including automatic swabbing [NASA-CASE-LAR-11069-1] c 35 N75-12272
- Automatic biowaste sampling [NASA-CASE-MSC-14640-1] c 54 N76-14804
- Remote water monitoring system [NASA-CASE-LAR-11973-1] c 35 N78-27384
- CCD correlated quadruple sampling processor [NASA-CASE-NPO-14426-1] c 33 N79-17134
- Fluid sample collection and distribution system --- qualitative analysis of aqueous samples from several points [NASA-CASE-MSC-16841-1] c 34 N79-24285
- Method and apparatus for detecting coliform organisms [NASA-CASE-ARC-11322-1] c 51 N82-12739

SANDWICH STRUCTURES

- Sandwich panel construction Patent [NASA-CASE-XLA-00349] c 33 N70-37979
- Micrometeoroid velocity measuring device Patent [NASA-CASE-XLA-00495] c 14 N70-41332



Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent [NASA-CASE-XLE-01246] c 14 N71-10797

Method of making inflatable honeycomb Patent [NASA-CASE-XLA-03492] c 15 N71-22713

Convoluting device for forming convolutions and the like Patent [NASA-CASE-XNP-05297] c 15 N71-23811

Composite sandwich lattice structure [NASA-CASE-LAR-11898-1] c 24 N78-10214

Low density bismaleimide-carbon microballoon composites [NASA-CASE-ARC-11040-1] c 24 N79-16915

Superplastically formed diffusion bonded metallic structure [NASA-CASE-FRC-11026-1] c 24 N82-24296

Multilayer thermal protection system [NASA-CASE-LAR-12620-1] c 24 N82-32417

**SAPPHIRE**

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide [NASA-CASE-GSC-11577-1] c 37 N75-15992

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide [NASA-CASE-GSC-11577-3] c 24 N79-25143

**SATELLITE ANTENNAS**

Antenna system using parasitic elements and two driven elements at 90 deg angle fed 180 deg out of phase Patent [NASA-CASE-XLA-00414] c 07 N70-38200

Apparatus providing a directive field pattern and attitude sensing of a spin stabilized satellite Patent [NASA-CASE-XGS-02607] c 31 N71-23009

Apparatus and method for determining the position of a radiant energy source [NASA-CASE-GSC-12147-1] c 32 N81-27341

Microwave switching power divider — antenna feeds [NASA-CASE-GSC-12420-1] c 33 N82-16340

**SATELLITE ATTITUDE CONTROL**

Photosensitive device to detect bearing deviation Patent [NASA-CASE-XNP-00438] c 21 N70-35089

Attitude control for spacecraft Patent [NASA-CASE-XNP-02982] c 31 N70-41855

Satellite despun device Patent [NASA-CASE-XMF-08523] c 31 N71-20396

Attitude control and damping system for spacecraft Patent [NASA-CASE-XLA-02551] c 21 N71-21708

Gravity gradient attitude control system Patent [NASA-CASE-GSC-10555-1] c 21 N71-27324

Spacecraft attitude control method and apparatus [NASA-CASE-HQN-10439] c 21 N72-21624

Dual purpose momentum wheels for spacecraft with magnetic recording [NASA-CASE-NPO-11481] c 21 N73-13644

Combination automatic-starting electrical plasma torch and gas shutoff valve — for satellite attitude control [NASA-CASE-XLE-10717] c 37 N75-29426

Attitude control system [NASA-CASE-MFS-22787-1] c 15 N77-10113

Rim inertial measuring system [NASA-CASE-LAR-12052-1] c 18 N81-29152

**SATELLITE CONTROL**

Stabilization of gravity oriented satellites Patent [NASA-CASE-XAC-01591] c 31 N71-17729

**SATELLITE DESIGN**

Inflation system for balloon type satellites Patent [NASA-CASE-XGS-03351] c 31 N71-16081

**SATELLITE INSTRUMENTS**

Reaction wheel scanner Patent [NASA-CASE-XGS-02629] c 14 N71-21082

**SATELLITE NETWORKS**

Satellite interface synchronization system [NASA-CASE-GSC-10390-1] c 07 N72-11149

**SATELLITE ORBITS**

Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent [NASA-CASE-HQN-00936] c 31 N71-29050

**SATELLITE ORIENTATION**

Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent [NASA-CASE-XGS-00466] c 21 N70-34297

Cartwheel satellite synchronization system Patent [NASA-CASE-XGS-05579] c 31 N71-15676

Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent [NASA-CASE-HQN-00936] c 31 N71-29050

Analog spatial maneuver computer [NASA-CASE-GSC-10880-1] c 08 N72-11172

**SATELLITE PERTURBATION**

Method and means for damping nutation in a satellite Patent [NASA-CASE-XMF-00442] c 31 N71-10747

**SATELLITE POWER TRANSMISSION (TO EARTH)**

Microwave power transmission beam safety system [NASA-CASE-NPO-14224-1] c 33 N80-18287

**SATELLITE ROTATION**

Optical spin compensator [NASA-CASE-XGS-02401] c 14 N69-27485

Stretch de-spin mechanism Patent [NASA-CASE-XGS-00619] c 30 N70-40016

Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent [NASA-CASE-HQN-00936] c 31 N71-29050

**SATELLITE TELEVISION**

Adaptive system and method for signal generation Patent [NASA-CASE-GSC-11367] c 10 N71-26374

**SATELLITE TRACKING**

Tracking receiver Patent [NASA-CASE-XGS-08679] c 10 N71-21473

Simultaneous acquisition of tracking data from two stations [NASA-CASE-NPO-13292-1] c 32 N75-15854

Switchable beamwidth monopulse method and system [NASA-CASE-GSC-11924-1] c 33 N76-27472

**SATELLITE TRANSMISSION**

Asynchronous, multiplexing, single line transmission and recovery data system — for satellite use [NASA-CASE-NPO-13321-1] c 32 N75-26195

**SATELLITE-BORNE PHOTOGRAPHY**

Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly — for use with cameras mounted in satellites [NASA-CASE-GSC-11560-1] c 33 N74-20861

Scanner — photography from a spin stabilized synchronous satellite [NASA-CASE-GSC-12032-2] c 43 N82-13465

**SATURABLE REACTORS**

Pulse switching for high energy lasers [NASA-CASE-NPO-14556-1] c 33 N82-24418

**SATURATION**

Method of detecting impending saturation of magnetic cores [NASA-CASE-ERC-10089] c 23 N72-17747

**SAWTOOTH WAVEFORMS**

Linear sawtooth voltage-wave generator employing transistor timing circuit having capacitor-zener diode combination feedback Patent [NASA-CASE-XMS-01315] c 09 N70-41875

**SCANNERS**

Monopulse system with an electronic scanner [NASA-CASE-XGS-05582] c 07 N69-27460

Electronic background suppression method and apparatus for a field scanning sensor [NASA-CASE-XGS-05211] c 07 N69-39980

Method and means for an improved electron beam scanning system Patent [NASA-CASE-ERC-10552] c 09 N71-12539

Reaction wheel scanner Patent [NASA-CASE-XGS-02629] c 14 N71-21082

Electronic scanning of 2-channel monopulse patterns Patent [NASA-CASE-GSC-10299-1] c 09 N71-24804

Method and apparatus for mapping the sensitivity of the face of a photodetector specifically a PMT [NASA-CASE-LAR-10320-1] c 09 N72-23172

Ultrasonic scanner for radial and flat panels [NASA-CASE-MFS-20335-1] c 35 N74-10415

Apparatus for scanning the surface of a cylindrical body [NASA-CASE-NPO-11861-1] c 36 N74-20009

Fast scan control for deflection type mass spectrometers [NASA-CASE-LAR-11428-1] c 35 N74-34857

Electronically scanned pressure sensor module with in situ calibration capability [NASA-CASE-LAR-12230-1] c 35 N79-14347

Scannable beam forming interferometer antenna array system [NASA-CASE-GSC-12365-1] c 32 N80-28578

Intrusion detection method and apparatus — monitoring unwanted subterranean entry and departure [NASA-CASE-ARC-11317-1] c 35 N81-19430

Programmable scan/read circuitry for charge coupled device imaging detectors — for a startracker [NASA-CASE-NPO-15345-1] c 33 N81-27403

Scanner — photography from a spin stabilized synchronous satellite [NASA-CASE-GSC-12032-2] c 43 N82-13465

Electronic scanning pressure measuring system and transducer package [NASA-CASE-ARC-11361-1] c 35 N82-26635

Optical crystal temperature gauge with fiber optic connections [NASA-CASE-MSC-18627-1] c 74 N82-30071

**SCANNING**

Television signal scan rate conversion system Patent [NASA-CASE-XMS-07168] c 07 N71-11300

Method of erasing target material of a vidicon tube or the like Patent [NASA-CASE-XNP-06028] c 09 N71-23189

Position determination systems — using orbital antenna scan of celestial bodies [NASA-CASE-MSC-12593-1] c 17 N76-21250

Magnetometer with a miniature transducer and automatic scanning [NASA-CASE-LAR-11617-2] c 35 N78-32397

System and method for character recognition [NASA-CASE-NPO-11337-1] c 74 N81-19896

**SCATTERING CROSS SECTIONS**

Method and means for helium/hydrogen ratio measurement by alpha scattering [NASA-CASE-NPO-14079-1] c 25 N80-20334

**SCHLIEREN PHOTOGRAPHY**

System and method for obtaining wide screen Schlieren photographs [NASA-CASE-NPO-14174-1] c 74 N79-20856

**SCHMIDT CAMERAS**

Cooled echelle grating spectrometer — for space telescope applications [NASA-CASE-NPO-14372-1] c 35 N80-26635

**SCHOOLS**

Silent emergency alarm system for schools and the like [NASA-CASE-NPO-11307-1] c 10 N73-30205

**SCHOTTKY DIODES**

High voltage, high current Schottky barrier solar cell [NASA-CASE-NPO-13482-1] c 44 N78-13526

Solar cells having integral collector grids [NASA-CASE-LEW-12819-1] c 44 N79-11467

Back wall solar cell [NASA-CASE-LEW-12236-2] c 44 N79-14528

Schottky barrier solar cell [NASA-CASE-NPO-13689-2] c 44 N81-29525

Thin wire pointing method [NASA-CASE-NPO-15789-1] c 33 N82-24426

Epitaxial thinning process [NASA-CASE-NPO-15786-1] c 25 N82-26397

Method of fabricating Schottky Barrier solar cell [NASA-CASE-NPO-13689-4] c 44 N82-28780

**SCOOPS**

Aeroflexible structures [NASA-CASE-XLA-06095] c 01 N69-39981

**SCORING**

Scorer for silicon wafers [NASA-CASE-NPO-15539-1] c 37 N82-11469

**SCRAMBLING (COMMUNICATION)**

Random digital encryption secure communication system [NASA-CASE-MSC-16462-1] c 32 N82-31583

**SCREWS**

Electromechanical control actuator system Patent [NASA-CASE-ERC-10022] c 15 N71-26635

Adjustable support [NASA-CASE-NPO-10721] c 15 N72-27484

Low noise lead screw positioner [NASA-CASE-NPO-15617-1] c 35 N82-33681

**SCRUBBERS**

High pressure gas filter system Patent [NASA-CASE-MFS-12806] c 14 N71-17588

**SEA ICE**

A technique for breaking ice in the path of a ship [NASA-CASE-LAR-10815-1] c 16 N72-22520

**SEA STATES**

Oceanic wave measurement system [NASA-CASE-MFS-23862-1] c 48 N80-18667

**SEALERS**

Pressure garment joint Patent [NASA-CASE-XMS-09636] c 05 N71-12344

Sealing device for an electrochemical cell Patent [NASA-CASE-XGS-02630] c 03 N71-22974

Bonded elastomeric seal for electrochemical cells Patent [NASA-CASE-XGS-02631] c 03 N71-23006

Self-lubricating fluoride metal composite materials Patent [NASA-CASE-XLE-08511] c 18 N71-23710

Polyimides of ether-linked aryl tetracarboxylic dianhydrides [NASA-CASE-MFS-22355-1] c 23 N76-15268

High performance filletting sealant [NASA-CASE-ARC-11409-1] c 27 N82-32490

High performance channel injection sealant invention abstract [NASA-CASE-ARC-14408-1] c 27 N82-33523

**SEALING**

Foil seal [NASA-CASE-XLE-05130] c 15 N69-21362

Sealed battery gas manifold construction Patent [NASA-CASE-XNP-03378] c 03 N71-11051

Sealing device for an electrochemical cell Patent [NASA-CASE-XGS-02630] c 03 N71-22974



Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022

Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256

Valve seat  
[NASA-CASE-NPO-10606] c 15 N72-25451

**SEALS (STOPPERS)**

Spacecraft battery seals  
[NASA-CASE-XGS-03864] c 15 N69-24320

Flexible seal for valves Patent  
[NASA-CASE-XLE-00101] c 15 N70-33376

Shrink-fit gas valve Patent  
[NASA-CASE-XGS-00587] c 15 N70-35087

Thin-walled pressure vessel Patent  
[NASA-CASE-XLE-04677] c 15 N71-10577

Foil seal Patent  
[NASA-CASE-XLE-05130-2] c 15 N71-19570

Storage container for electronic devices Patent  
[NASA-CASE-MFS-20075] c 09 N71-26133

Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294

Spiral groove seal — for rotating shaft  
[NASA-CASE-XLE-10326-4] c 37 N74-15125

Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063

High speed, self-acting shaft seal — for use in turbine engines  
[NASA-CASE-LEW-11274-1] c 37 N75-21631

Method of forming shrink-fit compression seal  
[NASA-CASE-LAR-11563-1] c 37 N77-23482

Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090

Composite seal for turbomachinery — backings for turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318

Retractable environmental seal  
[NASA-CASE-MFS-23646-1] c 37 N79-22474

Shaft seal assembly for high speed and high pressure applications  
[NASA-CASE-LEW-11873-1] c 37 N79-22475

Fluid pressure balanced seal  
[NASA-CASE-XGS-01286-1] c 37 N79-33469

Gas path seal  
[NASA-CASE-NPO-12131-3] c 37 N80-18400

Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658

Circumferential shaft seal  
[NASA-CASE-LEW-12119-1] c 37 N80-28711

Thermal barrier pressure seal — shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSC-18134-1] c 37 N81-15363

Modified face seal for positive film stiffness  
[NASA-CASE-LEW-12989-1] c 37 N82-12442

Surface conforming thermal/pressure seal — tail assemblies of space shuttle orbiters  
[NASA-CASE-MSC-18422-1] c 37 N82-16408

Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540

Continuous self-locking spiral wound seal — for maintaining pressure between chambers in cryogenic wind tunnels  
[NASA-CASE-LAR-12315-1] c 37 N82-24490

Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26674

Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453

**SEAMS (JOINTS)**

Traveling sealer for contoured table Patent  
[NASA-CASE-XLA-01494] c 15 N71-24164

Omnidirectional joint Patent  
[NASA-CASE-XMS-09635] c 05 N71-24623

Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c 37 N74-11301

**SEAT BELTS**

Shoulder harness and lap belt restraint system  
[NASA-CASE-ARC-10519-2] c 05 N75-25915

**SEATS**

Seat cushion to provide realistic acceleration cues to aircraft simulator pilot  
[NASA-CASE-LAR-12149-2] c 09 N79-31228

Variable response load limiting device — for aircraft seats  
[NASA-CASE-LAR-12801-1] c 37 N82-20544

**SECTORS**

Journal Bearings  
[NASA-CASE-LEW-11076-2] c 37 N74-32921

**SECURITY**

Passive intrusion detection system  
[NASA-CASE-NPO-13804-1] c 33 N80-23559

Intrusion detection method and apparatus — monitoring unwanted subterranean entry and departure  
[NASA-CASE-ARC-11317-1] c 35 N81-19430

Portable appliance security apparatus  
[NASA-CASE-GSC-12399-1] c 33 N81-25299

Random digital encryption secure communication system  
[NASA-CASE-MSC-16462-1] c 32 N82-31583

**SEGMENTS**

Method and apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917] c 15 N71-15597

**SEISMIC WAVES**

Seismic displacement transducer Patent  
[NASA-CASE-XMF-00479] c 14 N70-34794

Seismic vibration source  
[NASA-CASE-NPO-14112-1] c 46 N79-22679

Underwater seismic source — for petroleum exploration  
[NASA-CASE-NPO-14255-1] c 46 N79-23555

**SEISMOGRAPHS**

Intrusion detection method and apparatus — monitoring unwanted subterranean entry and departure  
[NASA-CASE-ARC-11317-1] c 35 N81-19430

**SELECTORS**

Molecular beam velocity selector Patent  
[NASA-CASE-XLE-01533] c 11 N71-10777

Peak polarity selector Patent  
[NASA-CASE-FRC-10010] c 10 N71-24862

**SELF ALIGNMENT**

Electro-optical alignment control system Patent  
[NASA-CASE-XMF-00908] c 14 N70-40238

**SELF ERECTING DEVICES**

Flexible foam erectable space structures Patent  
[NASA-CASE-XLA-00686] c 31 N70-34135

Erectable modular space station Patent  
[NASA-CASE-XLA-00678] c 31 N70-34296

Manned space station Patent  
[NASA-CASE-XLA-00258] c 31 N70-38676

Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579

Self-erecting reflector Patent  
[NASA-CASE-XGS-09190] c 31 N71-16102

Collapsible reflector Patent  
[NASA-CASE-XMS-03454] c 09 N71-20658

**SELF FOCUSING**

Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 32 N82-10287

**SELF LUBRICATING MATERIALS**

Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710

Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984

Method of making bearing material  
[NASA-CASE-LEW-11930-3] c 24 N80-33482

**SELF LUBRICATION**

Method of making bearing materials — self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11930-4] c 24 N79-17916

**SELF MANEUVERING UNITS**

Hand-held self-maneuvering unit Patent  
[NASA-CASE-XMS-05304] c 05 N71-12336

Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c 28 N71-27585

**SELF PROPAGATION**

Optical frequency waveguide Patent  
[NASA-CASE-HQN-10541-1] c 07 N71-26291

**SELF SEALING**

Modification of one man life raft  
[NASA-CASE-LAR-10241-1] c 54 N74-14845

Self-stabilizing radial face seal  
[NASA-CASE-LEW-12991-1] c 37 N81-24442

**SEMICONDUCTOR DEVICES**

Test fixture for pellet-like electrical elements  
[NASA-CASE-XNP-06032] c 09 N69-21926

Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980] c 09 N69-27422

A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148

Ultra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit Patent  
[NASA-CASE-XGS-00381] c 09 N70-34819

Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560

Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607

Apparatus and method for separating a semiconductor wafer Patent  
[NASA-CASE-ERC-10138] c 26 N71-14354

Voltage tunable Gunn-type microwave generator Patent  
[NASA-CASE-XER-07894] c 09 N71-18721

Method and device for determining battery state of charge Patent  
[NASA-CASE-NPO-10194] c 03 N71-20407

Multialarm summary alarm Patent  
[NASA-CASE-XLE-03061-1] c 10 N71-24798

Method of temperature compensating semiconductor strain gages Patent  
[NASA-CASE-XLA-04555-1] c 14 N71-25892

Pneumatic oscillator Patent  
[NASA-CASE-LEW-10345-1] c 10 N71-25899

Method and apparatus for detecting gross leaks Patent  
[NASA-CASE-ERC-10033] c 14 N71-26672

Transistor drive regulator Patent  
[NASA-CASE-LEW-10233] c 10 N71-27126

Orifice gross leak tester Patent  
[NASA-CASE-ERC-10150] c 14 N71-28992

Method of manufacturing semiconductor devices using refractory dielectrics  
[NASA-CASE-XER-08476-1] c 26 N72-17820

Fabrication of single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c 09 N72-22199

Electrical insulating layer process  
[NASA-CASE-LEW-10489-1] c 15 N72-25447

Gunn-type solid state devices  
[NASA-CASE-XER-07895] c 26 N72-25679

Semiconductor transducer device  
[NASA-CASE-ERC-10087-2] c 14 N72-31446

Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c 15 N73-14469

Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c 76 N76-25049

Semiconductor projectile impact detector  
[NASA-CASE-MFS-23008-1] c 35 N78-18390

Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
[NASA-CASE-MFS-23315-1] c 76 N78-24950

Apparatus for measuring semiconductor device resistance  
[NASA-CASE-NPO-14424-1] c 33 N80-32650

Electrical power generating system — for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280

Heat transparent high intensity high efficiency solar cell  
[NASA-CASE-LEW-12892-1] c 44 N81-27598

A method of increasing minority carrier lifetime in silicon web or the like — VLSI semiconductor devices and high performance solar cells  
[NASA-CASE-NPO-15530-1] c 76 N82-24993

**SEMICONDUCTOR JUNCTIONS**

Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027

Pressure sensitive transducers Patent  
[NASA-CASE-ERC-10087] c 14 N71-27334

Semiconductor surface protection material  
[NASA-CASE-ERC-10339-1] c 18 N73-30532

JFET oscillator  
[NASA-CASE-GSC-12555-1] c 33 N80-26601

High voltage planar multijunction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764

**SEMICONDUCTORS (MATERIALS)**

Depositing semiconductor films utilizing a thermal gradient  
[NASA-CASE-XKS-04614] c 15 N69-21460

System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616

High efficiency multivibrator Patent  
[NASA-CASE-XAC-00942] c 10 N71-16042

Method of making impurity-type semiconductor electrical contacts Patent  
[NASA-CASE-XMF-01016] c 26 N71-17818

Method of electrolytically binding a layer of semiconductors together Patent  
[NASA-CASE-XNP-01959] c 26 N71-23043

Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292

Infrared detectors  
[NASA-CASE-LAR-10728-1] c 14 N73-12445

Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c 33 N75-27251

Vapor deposition apparatus — semiconductors and gallium arsenide  
[NASA-CASE-HQN-10462] c 25 N75-29192

Application of semiconductor diffusants to solar cells by screen printing  
[NASA-CASE-LEW-12775-1] c 44 N79-11468



- Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910
- Voltage feed through apparatus having reduced partial discharge  
[NASA-CASE-GSC-12347-1] c 33 N80-18286
- Method for determining the point of zero zeta potential of semiconductor materials  
[NASA-CASE-LAR-12893-1] c 33 N82-26573
- SENSITIVITY**  
Active RC networks  
[NASA-CASE-MFS-10042-2] c 10 N72-11256
- SENSITOMETRY**  
Condition sensor system and method  
[NASA-CASE-MFS-14805-1] c 54 N78-32720
- SENSORS**  
Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260
- Medical subject monitoring systems — multichannel monitoring systems  
[NASA-CASE-MSC-14180-1] c 52 N76-14757
- SENSORY PERCEPTION**  
Tactile sensing means for prosthetic limbs  
[NASA-CASE-MFS-16570-1] c 05 N73-32013
- SEPARATED FLOW**  
Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c 28 N70-34294
- Double hinged flap Patent  
[NASA-CASE-XLA-01290] c 02 N70-42016
- Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c 18 N71-20742
- Flow separation detector  
[NASA-CASE-ARC-11046-1] c 35 N78-14364
- SEPARATORS**  
Condenser - Separator  
[NASA-CASE-XLA-08645] c 15 N69-21465
- Umbilical separator for rockets Patent  
[NASA-CASE-XNP-00425] c 11 N70-38202
- Liquid-gas separation system Patent  
[NASA-CASE-XMS-01624] c 15 N70-40062
- Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968
- Separator Patent  
[NASA-CASE-XLA-00415] c 15 N71-16079
- Water separating system Patent  
[NASA-CASE-XMS-13052] c 14 N71-20427
- Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023
- Air removal device  
[NASA-CASE-XLA-8914] c 15 N73-12492
- Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c 34 N74-30608
- Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c 34 N75-26282
- Method and apparatus for fluffing, separating, and cleaning fibers  
[NASA-CASE-LAR-11224-1] c 37 N76-18456
- Gels as battery separators for soluble electrode cells  
[NASA-CASE-LEW-12364-1] c 44 N77-22606
- Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c 35 N78-12390
- Automatic multiple-sample applicator and electrophoresis apparatus  
[NASA-CASE-ARC-10991-1] c 25 N78-14104
- Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090
- Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530
- Formulated plastic separators for soluble electrode cells — rubber-ion transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313
- Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345
- In situ self cross-linking of polyvinyl alcohol battery separators  
[NASA-CASE-LEW-12972-1] c 44 N79-25481
- Partial interlamellar separation system for composites  
[NASA-CASE-LAR-12065-1] c 24 N81-14000
- Polyvinyl alcohol battery separator containing inert filler — alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615
- Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 44 N81-29531
- Static continuous electrophoresis device  
[NASA-CASE-MFS-25306-1] c 25 N82-11147
- Method of making formulated plastic separators for soluble electrode cells  
[NASA-CASE-LEW-12358-2] c 25 N82-21268
- Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24841
- Separator for alkaline batteries and method of making same  
[NASA-CASE-GSC-10350-1] c 44 N82-24642
- Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643
- Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644
- Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645
- Acoustic particle separation  
[NASA-CASE-NPO-15559-1] c 71 N82-29112
- Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370
- Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708
- SEQUENCING**  
Synchronous counter Patent  
[NASA-CASE-XGS-02440] c 08 N71-19432
- Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418
- Digital function generator  
[NASA-CASE-NPO-11104] c 08 N72-22165
- MOD 2 sequential function generator for multibit binary sequence  
[NASA-CASE-NPO-10636] c 08 N72-25210
- Pseudonoise sequence generators with three tap linear feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175
- Mechanical sequencer  
[NASA-CASE-MSC-19536-1] c 37 N77-22482
- Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-15670-1] c 33 N82-33634
- SEQUENTIAL ANALYSIS**  
Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11194] c 08 N72-25209
- Event sequence detector  
[NASA-CASE-NPO-11703-1] c 10 N73-32144
- SEQUENTIAL COMPUTERS**  
Digital data reformatter/deserializer  
[NASA-CASE-NPO-13676-1] c 60 N79-20751
- SEQUENTIAL CONTROL**  
Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503
- Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c 08 N71-12505
- Sequencing device utilizing planetary gear set  
[NASA-CASE-MSC-19514-1] c 37 N79-20377
- SERUMS**  
Reduction of blood serum cholesterol  
[NASA-CASE-NPO-12119-1] c 52 N75-15270
- SERVICE LIFE**  
Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-10503-1] c 09 N72-21248
- SERVOAMPLIFIERS**  
Pneumatic amplifier Patent  
[NASA-CASE-MSC-12121-1] c 15 N71-27147
- SERVOCONTROL**  
Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460
- Proportional controller Patent  
[NASA-CASE-XAC-03392] c 03 N70-41954
- Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479
- Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c 32 N71-25360
- Energy limiter for hydraulic actuators Patent  
[NASA-CASE-ARC-10131-1] c 15 N71-27754
- Digital servo controller — for rotating antenna shaft  
[NASA-CASE-KSC-10769-1] c 33 N74-29556
- Digital servo control of random sound test excitation — in reverberant acoustic chamber  
[NASA-CASE-NPO-11623-1] c 71 N74-31148
- Phase-locked servo system — for synchronizing the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c 33 N75-13139
- Servo-controlled intravital microscope system  
[NASA-CASE-NPO-13214-1] c 35 N75-25123
- Autonomous navigation system — gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047
- System for moving a probe to follow movements of tissue  
[NASA-CASE-NPO-15197-1] c 52 N81-26697
- Control system for an induction motor with energy recovery  
[NASA-CASE-MFS-25477-1] c 33 N82-22437
- SERVOMECHANISMS**  
Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c 14 N71-17682
- Line following servosystem Patent  
[NASA-CASE-XAC-00001] c 15 N71-28952
- A dc servosystem including an ac motor Patent  
[NASA-CASE-NPO-10700] c 07 N71-33613
- Ball screw linear actuator  
[NASA-CASE-NPO-11222] c 15 N72-25456
- Rotary actuator  
[NASA-CASE-NPO-10680] c 31 N73-14855
- Hydraulic drain means for servo-systems  
[NASA-CASE-NPO-10316-1] c 37 N77-22479
- Actuator mechanism  
[NASA-CASE-GSC-11883-2] c 37 N78-31426
- Apparatus for providing a servo drive signal in a high-speed stepping interferometer  
[NASA-CASE-NPO-13569-2] c 35 N79-14348
- Automated syringe sampler — remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407
- Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483
- A simplified power factor controller with increased energy saving circuit  
[NASA-CASE-MFS-25323-1] c 33 N82-12349
- Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205
- SERVOMOTORS**  
Automatic closed circuit television arc guidance control Patent  
[NASA-CASE-MFS-13046] c 07 N71-19433
- Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMF-05195] c 10 N71-24861
- Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427
- Rotary actuator  
[NASA-CASE-NPO-10680] c 31 N73-14855
- Velocity servo for continuous scan Fourier interference spectrometer  
[NASA-CASE-NPO-14093-1] c 35 N80-20563
- SEWAGE TREATMENT**  
Sewage sludge additive  
[NASA-CASE-NPO-13877-1] c 45 N82-11634
- SHAFTS (MACHINE ELEMENTS)**  
Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505
- Elastic universal joint Patent  
[NASA-CASE-XNP-00416] c 15 N70-36947
- Apparatus for absorbing and measuring power Patent  
[NASA-CASE-XLE-00720] c 14 N70-40201
- Two-axis controller Patent  
[NASA-CASE-XFR-04104] c 03 N70-42073
- Ratchet mechanism Patent  
[NASA-CASE-MFS-12805] c 15 N71-17805
- Frictionless universal joint Patent  
[NASA-CASE-NPO-10646] c 15 N71-28467
- Spiral groove seal  
[NASA-CASE-XLE-10326-2] c 15 N72-29488
- High speed hybrid bearing comprising a fluid bearing and a rolling bearing connected in series  
[NASA-CASE-LEW-11152-1] c 15 N73-32359
- Spiral groove seal — for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c 37 N74-10474
- Hole cutter — drill bits and rotating shaft  
[NASA-CASE-MFS-22649-1] c 37 N75-25186
- Twinned-capacitive shaft angle encoder with analog output signal  
[NASA-CASE-ARC-10897-1] c 33 N77-31404
- Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090
- Sequencing device utilizing planetary gear set  
[NASA-CASE-MSC-19514-1] c 37 N79-20377
- Shaft seal assembly for high speed and high pressure applications  
[NASA-CASE-LEW-11873-1] c 37 N78-22475
- Speed control device for a heavy duty shaft — solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15364
- Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370
- Circumferential shaft seal  
[NASA-CASE-LEW-12119-2] c 37 N81-26447
- Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N82-24473
- Hermetic seal for a shaft  
[NASA-CASE-NPO-15115-1] c 37 N82-24493
- Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 44 N82-29713
- SHALE OIL**  
In-situ laser retorting of oil shale  
[NASA-CASE-LEW-12217-1] c 43 N78-14452
- SHALES**  
Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443
- Coal-shale interface detection system  
[NASA-CASE-MFS-23720-2] c 43 N80-14423



Coal-chale interface detector  
[NASA-CASE-MFS-23720-1] c 43 N80-23711

**SHAPED CHARGES**  
Coupling for linear shaped charge Patent  
[NASA-CASE-XLA-00189] c 33 N70-36846  
Lateral displacement system for separated rocket stages Patent  
[NASA-CASE-XLA-04804] c 31 N71-23008

**SHAPERS**  
Mandrel for shaping solid propellant rocket fuel into a motor casing Patent  
[NASA-CASE-XLA-00304] c 27 N70-34783  
Tube dimpling tool Patent  
[NASA-CASE-XMS-06876] c 15 N71-21536  
Dielectric molding apparatus Patent  
[NASA-CASE-LAR-10121-1] c 15 N71-26721

**SHAPES**  
Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 33 N82-24426

**SHARKS**  
Process for conditioning tanned sharkskin and articles made therefrom Patent  
[NASA-CASE-XMS-09691-1] c 18 N71-15545

**SHARPNESS**  
Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149

**SHEAR CREEP**  
Instrument for measuring torsional creep and recovery Patent  
[NASA-CASE-XLE-01481] c 14 N71-10781

**SHEAR FLOW**  
Shear modulated fluid amplifier Patent  
[NASA-CASE-MFS-10412] c 12 N71-17578

**SHEAR PROPERTIES**  
Parallel plate viscometer Patent  
[NASA-CASE-XNP-09462] c 14 N71-17584

**SHEAR STRESS**  
Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505  
Angular velocity and acceleration measuring apparatus  
[NASA-CASE-ERC-10292] c 14 N72-25410  
Bonded joint and method — for reducing peak shear stress in adhesive bonds  
[NASA-CASE-LAR-10900-1] c 37 N74-23064

**SHELLS (STRUCTURAL FORMS)**  
Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860

**SHIELDING**  
Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937  
Shielded flat cable  
[NASA-CASE-MFS-13687-2] c 09 N72-22198  
System for the measurement of ultra-low stray light levels — determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865

**SHIFT REGISTERS**  
Binary to binary-coded-decimal converter Patent  
[NASA-CASE-XNP-00432] c 08 N70-35423  
Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503  
Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897  
Current steering commutator  
[NASA-CASE-NPO-10743] c 08 N72-21199  
Feedback shift register with states decomposed into cycles of equal length  
[NASA-CASE-NPO-11082] c 08 N72-22167  
MOD 2 sequential function generator for multibit binary sequence  
[NASA-CASE-NPO-10636] c 08 N72-25210  
Pseudonoise sequence generators with three tap linear feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175  
A m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c 10 N73-20254  
Counting digital filters  
[NASA-CASE-NPO-11821-1] c 08 N73-26175  
Event sequence detector  
[NASA-CASE-NPO-11703-1] c 10 N73-32144  
Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c 32 N74-32598  
Nonlinear nonsingular feedback shift registers  
[NASA-CASE-NPO-13451-1] c 33 N76-14373  
Selective data segment monitoring system — using shift registers  
[NASA-CASE-ARC-10899-1] c 60 N77-19760  
Digital data reformatter/deserializer  
[NASA-CASE-NPO-13676-1] c 60 N79-20751

**SHOCK ABSORBERS**  
Pivotal shock absorbing pad assembly Patent  
[NASA-CASE-XMF-03856] c 31 N70-34159  
Frangible tube energy dissipation Patent  
[NASA-CASE-XLA-00754] c 15 N70-34850

Shock absorbing support and restraint means Patent  
[NASA-CASE-XMS-01240] c 05 N70-35152  
Energy absorbing structure Patent Application  
[NASA-CASE-MSC-12279-1] c 15 N70-35679  
Landing pad assembly for aerospace vehicles Patent  
[NASA-CASE-XMF-02853] c 31 N70-36654  
Space craft soft landing system Patent  
[NASA-CASE-XMF-02108] c 31 N70-36845  
Double-acting shock absorber Patent  
[NASA-CASE-XMF-01045] c 15 N70-40354  
Articulated multiple couch assembly Patent  
[NASA-CASE-MSC-11253] c 05 N71-12343  
Shock absorber Patent  
[NASA-CASE-XMS-03722] c 15 N71-21530  
Impact energy absorber Patent  
[NASA-CASE-XLA-01530] c 14 N71-23092  
Low onset rate energy absorber  
[NASA-CASE-MSC-12279] c 15 N72-17450  
Impact energy absorbing system utilizing fractureable material  
[NASA-CASE-NPO-10671] c 15 N72-20443  
Translatory shock absorber for attitude sensors  
[NASA-CASE-MFS-22605-1] c 19 N76-22284  
Vehicular impact absorption system  
[NASA-CASE-NPO-14014-1] c 37 N79-10420  
Variable response load limiting device — for aircraft seats  
[NASA-CASE-LAR-12801-1] c 37 N82-20544

**SHOCK LOADS**  
Wind tunnel model damper Patent  
[NASA-CASE-XLA-09480] c 11 N71-33612

**SHOCK MEASURING INSTRUMENTS**  
Semiconductor projectile impact detector  
[NASA-CASE-MFS-23008-1] c 35 N78-18390

**SHOCK RESISTANCE**  
Method and apparatus for shock protection Patent  
[NASA-CASE-XLA-00482] c 15 N70-36409  
Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584  
Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206  
Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 27 N81-22190

**SHOCK TUBES**  
Means for controlling rupture of shock tube diaphragms Patent  
[NASA-CASE-XAC-00731] c 11 N71-15960  
Shock tube bypass piston tunnel  
[NASA-CASE-NPO-12109] c 11 N72-22245  
Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071

**SHOCK WAVE INTERACTION**  
Absorptive splitter for closely spaced supersonic engine air inlets Patent  
[NASA-CASE-XLA-02865] c 28 N71-15563

**SHOCK WAVE LUMINESCENCE**  
Shock-layer radiation measurement  
[NASA-CASE-XAC-02970] c 14 N69-39896

**SHOCK WAVE PROFILES**  
Shock-layer radiation measurement  
[NASA-CASE-XAC-02970] c 14 N69-39896  
Adapter for mounting microphone flush with the external surface of the skin of a pressurized aircraft  
[NASA-CASE-FRC-11072-1] c 35 N82-24474

**SHOCK WAVES**  
Shock tube powder dispersing apparatus Patent  
[NASA-CASE-XLE-04946] c 17 N71-24911  
Shock wave convergence apparatus  
[NASA-CASE-MFS-20890] c 14 N72-22439  
Synthesis of superconducting compounds by explosive compaction of powders  
[NASA-CASE-MFS-20861-1] c 18 N73-32437  
Shock position sensor for supersonic inlets — measuring pressure in the throat of a supersonic inlet  
[NASA-CASE-LEW-11915-1] c 35 N76-14431

**SHOES**  
Jet shoes  
[NASA-CASE-XLA-08491] c 05 N69-21380

**SHORT CIRCUITS**  
Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146  
Tnode thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898  
Analog to digital converter tester Patent  
[NASA-CASE-XLA-06713] c 14 N71-28991  
Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18193  
Test apparatus for locating shorts during assembly of electrical buses  
[NASA-CASE-ARC-11116-1] c 33 N82-24420

**SHOT PEENING**  
Method of peening and portable peening gun  
[NASA-CASE-MFS-23047-1] c 37 N76-18454

**SHROUDED NOZZLES**  
Two dimensional wedge/translating shroud nozzle  
[NASA-CASE-LAR-11919-1] c 07 N78-27121

**SHROUDED TURBINES**  
Composite seal for turbomachinery — backings for turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318  
Gas path seal  
[NASA-CASE-NPO-12131-3] c 37 N80-18400  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658  
Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 27 N81-22190

**SHROUDS**  
Composite powerplant and shroud therefor Patent  
[NASA-CASE-XLA-01043] c 28 N71-10780  
Composite seal for turbomachinery — backings for turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540  
Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366

**SHUTTERS**  
High speed shutter — electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c 70 N74-21300

**SIDE INLETS**  
Low-drag ground vehicle particularly suited for use in safety transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288

**SIDEBANDS**  
Phase-locked loop with sideband rejecting properties Patent  
[NASA-CASE-XNP-02723] c 07 N70-41680

**SIDELobe REDUCTION**  
Dual mode horn antenna Patent  
[NASA-CASE-XNP-01057] c 07 N71-15907

**SIGNAL ANALYSIS**  
Signal detection and tracking apparatus Patent  
[NASA-CASE-XGS-03502] c 10 N71-20852  
Method and apparatus for a single channel digital communications system — synchronization of received PCM signal by digital correlation with reference signal  
[NASA-CASE-NPO-11302-2] c 32 N74-10132  
Differential phase shift keyed signal resolver  
[NASA-CASE-MSC-14066-1] c 33 N74-27705  
Correlation type phase detector — with time correlation integrator for frequency multiplexed signals  
[NASA-CASE-GSC-11744-1] c 33 N75-26243  
Real time analysis of voiced sounds  
[NASA-CASE-NPO-13465-1] c 32 N76-31372  
Digital plus analog output encoder  
[NASA-CASE-GSC-12115-1] c 62 N76-31946  
Serial data correlator/code translator  
[NASA-CASE-KSC-11025-1] c 32 N79-28383

**SIGNAL ANALYZERS**  
System for monitoring signal amplitude ranges  
[NASA-CASE-XMS-04061-1] c 09 N69-39885  
Sampled data controller Patent  
[NASA-CASE-GSC-10554-1] c 08 N71-29033  
Family of frequency to amplitude converters  
[NASA-CASE-MSC-12395] c 09 N72-25257  
Apparatus for statistical time-series analysis of electrical signals  
[NASA-CASE-MSC-12428-1] c 10 N73-25240  
Pulse stretcher for narrow pulses  
[NASA-CASE-MSC-14130-1] c 33 N74-32711  
Electronic optical transfer function analyzer  
[NASA-CASE-MFS-21672-1] c 74 N76-19935  
Speech analyzer  
[NASA-CASE-GSC-11898-1] c 32 N77-30309

**SIGNAL DETECTION**  
Position location system and method Patent  
[NASA-CASE-GSC-10087-2] c 21 N71-13958  
Method of detecting impending saturation of magnetic cores  
[NASA-CASE-ERC-10089] c 23 N72-17747  
Anti-multipath digital signal detector  
[NASA-CASE-LAR-11827-1] c 32 N77-10392  
Multiple rate digital command detection system with range clean-up capability  
[NASA-CASE-NPO-13753-1] c 32 N77-20289  
Automatic communication signal monitoring system  
[NASA-CASE-NPO-13941-1] c 32 N79-10262  
Apparatus and method for stabilized phase detection for binary signal tracking loops  
[NASA-CASE-MSC-16461-1] c 33 N79-11313  
Receiving and tracking phase modulated signals  
[NASA-CASE-MSC-16170-2] c 32 N81-16338

**SIGNAL DETECTORS**  
Surface roughness detector Patent  
[NASA-CASE-XLA-00203] c 14 N70-34161  
Pulse amplitude and width detector Patent  
[NASA-CASE-XMF-06519] c 09 N71-12519



- System for monitoring the presence of neutrals in a stream of ions Patent  
[NASA-CASE-XNP-02592] c 24 N71-20518
- Digital modulator and demodulator Patent  
[NASA-CASE-ERC-10041] c 08 N71-29138
- Coal-shale interface detection system  
[NASA-CASE-MFS-23720-2] c 43 N80-14423
- Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969
- Self-calibrating threshold detector  
[NASA-CASE-MSC-16370-1] c 35 N81-19427
- Maser amplifier slow wave structure — detecting weak signals from spacecraft  
[NASA-CASE-NPO-15211-1] c 36 N81-24425
- Trac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N82-26574
- SIGNAL DISTORTION**
- Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MSC-14557-1] c 32 N76-16249
- SIGNAL ENCODING**
- Adaptive compression of communication signals Patent  
[NASA-CASE-XLA-03076] c 07 N71-11266
- Self-calibrating threshold detector  
[NASA-CASE-MSC-16370-1] c 35 N81-19427
- Random digital encryption secure communication system  
[NASA-CASE-MSC-16462-1] c 32 N82-31583
- SIGNAL GENERATORS**
- Plural recorder system  
[NASA-CASE-XMS-06949] c 09 N69-21467
- Signal generator  
[NASA-CASE-XNP-05612] c 09 N69-21468
- Means for generating a sync signal in an FM communication system Patent  
[NASA-CASE-XNP-10830] c 07 N71-11281
- Array phasing device Patent  
[NASA-CASE-ERC-10046] c 10 N71-18722
- Sidereal frequency generator Patent  
[NASA-CASE-XGS-02610] c 14 N71-23174
- Controllers Patent  
[NASA-CASE-XMS-07487] c 15 N71-23255
- Signal radio system utilizing voltage controlled oscillators Patent  
[NASA-CASE-XMF-04367] c 09 N71-23545
- Signal processing apparatus for multiplex transmission Patent  
[NASA-CASE-NPO-10388] c 07 N71-24622
- Multibeam summary alarm Patent  
[NASA-CASE-XLE-03061-1] c 10 N71-24798
- Adaptive system and method for signal generation Patent  
[NASA-CASE-GSC-11367] c 10 N71-26374
- Voltage dropout sensor Patent  
[NASA-CASE-KSC-10020] c 10 N71-27338
- System for controlling the operation of a variable signal device  
[NASA-CASE-NPO-11064] c 07 N72-11150
- Digital function generator  
[NASA-CASE-NPO-11104] c 08 N72-22165
- Hall effect transducer  
[NASA-CASE-LAR-10620-1] c 09 N72-25255
- Gunn-type solid state devices  
[NASA-CASE-XER-07895] c 26 N72-25679
- Audio frequency marker system  
[NASA-CASE-NPO-11147] c 14 N72-27408
- Digital servo control of random sound test excitation — in reverberant acoustic chamber  
[NASA-CASE-NPO-11623-1] c 71 N74-31148
- Signal conditioner test set  
[NASA-CASE-KSC-10750-1] c 35 N75-12270
- System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c 33 N75-19519
- Pseudo-noise test set for communication system evaluation — test signals  
[NASA-CASE-MFS-22671-1] c 35 N75-21582
- NDIR gas analyzer based on absorption modulation ratios for known and unknown samples  
[NASA-CASE-ARC-10802-1] c 35 N75-30502
- Twin-capacitive shaft angle encoder with analog output signal  
[NASA-CASE-ARC-10897-1] c 33 N77-31404
- Apparatus for providing a servo drive signal in a high-speed stepping interferometer  
[NASA-CASE-NPO-13569-2] c 35 N79-14348
- Versatile LDV burst simulator  
[NASA-CASE-LAR-11859-1] c 35 N79-14349
- Underwater seismic source — for petroleum exploration  
[NASA-CASE-NPO-14255-1] c 46 N79-23555
- Frequency translating phase conjugation circuit for active retrodirective antenna array — microwave transmission  
[NASA-CASE-NPO-14536-1] c 32 N81-14185
- Integrated control system for a gas turbine engine  
[NASA-CASE-LEW-12594-2] c 07 N81-19116
- Adaptive reference voltage generator for fining angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N81-31481
- Motor power factor controller with a reduced voltage starter  
[NASA-CASE-MFS-25586-1] c 33 N82-11360
- Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716
- Real time pressure signal system for a rotary engine  
[NASA-CASE-LEW-13622-1] c 07 N82-26294
- Inflight IFR procedures simulator  
[NASA-CASE-KSC-11218-1] c 09 N82-29331
- SIGNAL MIXING**
- Signal multiplexer  
[NASA-CASE-XGS-01110] c 07 N69-24334
- Baseband signal combiner for large aperture antenna array  
[NASA-CASE-NPO-14641-1] c 32 N81-29308
- SIGNAL PROCESSING**
- Adaptive compression of communication signals Patent  
[NASA-CASE-XLA-03076] c 07 N71-11266
- Television signal scan rate conversion system Patent  
[NASA-CASE-XMS-07168] c 07 N71-11300
- Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537
- Correlation function apparatus Patent  
[NASA-CASE-XNP-00746] c 07 N71-21476
- Sidereal frequency generator Patent  
[NASA-CASE-XGS-02610] c 14 N71-23174
- Feedback integrator with grounded capacitor Patent  
[NASA-CASE-XAC-10607] c 10 N71-23669
- Signal processing apparatus for multiplex transmission Patent  
[NASA-CASE-NPO-10388] c 07 N71-24622
- Television signal processing system Patent  
[NASA-CASE-NPO-10140] c 07 N71-24742
- Electronic scanning of 2-channel monopulse patterns Patent  
[NASA-CASE-GSC-10299-1] c 09 N71-24804
- Remodulator filter Patent  
[NASA-CASE-NPO-10198] c 09 N71-24806
- Video sync processor Patent  
[NASA-CASE-KSC-10002] c 10 N71-25865
- Transient video signal recording with expanded playback Patent  
[NASA-CASE-ARC-10003-1] c 09 N71-25866
- Phase multiplying electronic scanning system Patent  
[NASA-CASE-NPO-10302] c 10 N71-26142
- Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266
- Digital modulator and demodulator Patent  
[NASA-CASE-ERC-10041] c 08 N71-29138
- Digital pulse width selection circuit Patent  
[NASA-CASE-XLA-07788] c 09 N71-29139
- Phase shift circuit apparatus  
[NASA-CASE-ARC-10269-1] c 10 N72-16172
- Contourograph system for monitoring electrocardiograms  
[NASA-CASE-MSC-13407-1] c 10 N72-20225
- Recorder using selective noise filter  
[NASA-CASE-ERC-10112] c 07 N72-21119
- Logarithmic function generator utilizing an exponentially varying signal in an inverse manner  
[NASA-CASE-ERC-10267] c 09 N72-23173
- Flexible computer accessed telemetry  
[NASA-CASE-NPO-11358] c 07 N72-25172
- Data processor with conditionally supplied clock signals  
[NASA-CASE-GSC-10975-1] c 08 N73-13187
- Multichannel telemetry system  
[NASA-CASE-NPO-11572] c 07 N73-16121
- Measurement system  
[NASA-CASE-MFS-20658-1] c 14 N73-30386
- Digital to analog conversion apparatus  
[NASA-CASE-MSC-12458-1] c 08 N73-32081
- Fluid pressure amplifier and system  
[NASA-CASE-LAR-10868-1] c 33 N74-11050
- Low level signal limiter  
[NASA-CASE-XLE-04791] c 32 N74-22096
- Miniature multichannel biotelemetry system  
[NASA-CASE-NPO-13065-1] c 52 N74-26625
- Apparatus and method for processing Korotkov sounds — for blood pressure measurement  
[NASA-CASE-MSC-13999-1] c 52 N74-26626
- Pulse stretcher for narrow pulses  
[NASA-CASE-MSC-14130-1] c 33 N74-32711
- Continuous Fourier transform method and apparatus — for the analysis of simultaneous analog signal components  
[NASA-CASE-ARC-10466-1] c 60 N75-13539
- Signal conditioning circuit apparatus — with constant input impedance  
[NASA-CASE-ARC-10348-1] c 33 N75-19518
- Television noise reduction device  
[NASA-CASE-MSC-12607-1] c 32 N75-21485
- Isolated output system for a class D switching-mode amplifier  
[NASA-CASE-MFS-21616-1] c 33 N75-30429
- Compact bi-phase pulse coded modulation decoder  
[NASA-CASE-KSC-10834-1] c 33 N76-14371
- Filtering device — removing electromagnetic noise from voice communication signals  
[NASA-CASE-MFS-22729-1] c 32 N76-21366
- System for measuring Reynolds in a turbulently flowing fluid — signal processing  
[NASA-CASE-ARC-10755-2] c 34 N76-27517
- Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c 33 N77-26386
- Apparatus for determining thermophysical properties of test specimens  
[NASA-CASE-LAR-11883-1] c 09 N77-27131
- Analog to digital converter for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-3] c 60 N77-32731
- Hearing aid malfunction detection system  
[NASA-CASE-MSC-14916-1] c 33 N78-10375
- Swept group delay measurement  
[NASA-CASE-NPO-13909-1] c 33 N78-25319
- Quadrature demodulation  
[NASA-CASE-GSC-12137-1] c 33 N78-32338
- Bit error rate measurement above and below bit rate tracking threshold  
[NASA-CASE-MSC-12743-1] c 32 N79-10263
- Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-1] c 32 N79-19195
- Electrochemical detection device — for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073
- Serial data correlator/code translator  
[NASA-CASE-KSC-11025-1] c 32 N79-28383
- Scannable beam forming interferometer antenna array system  
[NASA-CASE-GSC-12365-1] c 32 N80-28578
- System for plotting subsoil structure and method therefor  
[NASA-CASE-NPO-14191-1] c 31 N80-32584
- Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 35 N81-12386
- Navigation system and method  
[NASA-CASE-GSC-12508-1] c 04 N81-26085
- CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N81-27396
- Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342
- Wideband passive synthetic-aperture multichannel receiver  
[NASA-CASE-NPO-15651-1] c 32 N82-26523
- Television camera video level control system — space shuttle orbiters  
[NASA-CASE-MSC-18578-1] c 74 N82-27121
- Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013
- Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539
- SIGNAL RECEPTION**
- Radar ranging receiver Patent  
[NASA-CASE-XNP-00748] c 07 N70-36911
- Reflectometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c 07 N71-11267
- Diversity receiving system with diversity phase lock Patent  
[NASA-CASE-XGS-01222] c 10 N71-20841
- Signal detection and tracking apparatus Patent  
[NASA-CASE-XGS-03502] c 10 N71-20852
- Optimum predetection diversity receiving system Patent  
[NASA-CASE-XGS-00740] c 07 N71-23098
- Decoder system Patent  
[NASA-CASE-NPO-10118] c 07 N71-24741
- Antenna array phase quadrature tracking system Patent  
[NASA-CASE-MSC-12205-1] c 07 N71-27056
- Electricity measurement devices employing liquid crystalline materials  
[NASA-CASE-ERC-10275] c 26 N72-25680
- Filter for third order phase locked loops  
[NASA-CASE-NPO-11941-1] c 10 N73-27171
- Ferrofluidic solenoid  
[NASA-CASE-NPO-11738-1] c 09 N73-30185
- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c 35 N76-16391
- Receiving and tracking phase modulated signals  
[NASA-CASE-MSC-16170-2] c 32 N81-16338



- Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381
- SIGNAL REFLECTION**
- Reflectometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c 07 N71-11267
- Reflex feed system for dual frequency antenna with frequency cutoff means  
[NASA-CASE-NPO-14022-1] c 32 N78-31321
- Doppler radar having phase modulation of both transmitted and reflected return signals --- ranging  
[NASA-CASE-MSC-18675-1] c 32 N81-29312
- SIGNAL STABILIZATION**
- Linear accelerator frequency control system Patent  
[NASA-CASE-XGS-05441] c 10 N71-22962
- Digital modulator and demodulator Patent  
[NASA-CASE-ERC-10041] c 08 N71-29138
- System for interference signal nulling by polarization adjustment  
[NASA-CASE-NPO-13140-1] c 32 N75-24982
- Fiber optic transmission line stabilization apparatus and method  
[NASA-CASE-NPO-15036-1] c 74 N82-19029
- Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 36 N82-28619
- SIGNAL TO NOISE RATIOS**
- System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616
- Radar ranging receiver Patent  
[NASA-CASE-XNP-00748] c 07 N70-36911
- Phase detector assembly Patent  
[NASA-CASE-XMF-00701] c 09 N70-40272
- Signal-to-noise ratio estimating by taking ratio of mean and standard deviation of integrated signal samples Patent  
[NASA-CASE-XNP-05254] c 07 N71-20791
- Signal ratio system utilizing voltage controlled oscillators Patent  
[NASA-CASE-XMF-04367] c 09 N71-23545
- Recorder using selective noise filter  
[NASA-CASE-ERC-10112] c 07 N72-21119
- Parametric amplifiers with idler circuit feedback  
[NASA-CASE-LAR-10253-1] c 09 N72-25258
- System for improving signal-to-noise ratio of a communication signal  
[NASA-CASE-MSC-12259-2] c 07 N72-33146
- Signal-to-noise ratio determination circuit  
[NASA-CASE-GSC-11239-1] c 10 N73-25241
- Gated compressor, distortionless signal limiter  
[NASA-CASE-NPO-11820-1] c 32 N74-19788
- SIGNAL TRANSMISSION**
- Time division multiplex system  
[NASA-CASE-XGS-05918] c 07 N69-39974
- Apparatus for coupling a plurality of ungrounded circuits to a grounded circuit Patent  
[NASA-CASE-XAC-00086] c 09 N70-33182
- Bi-carrier demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c 07 N71-11298
- Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392
- Signal-to-noise ratio estimating by taking ratio of mean and standard deviation of integrated signal samples Patent  
[NASA-CASE-XNP-05254] c 07 N71-20791
- Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c 07 N71-20814
- Adaptive tracking notch filter system Patent  
[NASA-CASE-XMF-01892] c 10 N71-22986
- Passive synchronized spike generator with high input impedance and low output impedance and capacitor power supply Patent  
[NASA-CASE-XGS-03632] c 09 N71-23311
- Junction range finder  
[NASA-CASE-KSC-10108] c 14 N73-25461
- Television multiplexing system  
[NASA-CASE-KSC-10654-1] c 07 N73-30115
- Controlled oscillator system with a time dependent output frequency  
[NASA-CASE-NPO-11962-1] c 33 N74-10194
- Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12462-1] c 32 N74-20809
- Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12494-1] c 32 N74-20810
- Digital transmitter for data bus communications system  
[NASA-CASE-MSC-14558-1] c 32 N75-21486
- Modulator for tone and binary signals --- phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981

- Method and apparatus for background signal reduction in opto-acoustic absorption measurement  
[NASA-CASE-NPO-13683-1] c 35 N77-14411
- Automatic transponder --- measurement of the internal delay time of a transponder  
[NASA-CASE-GSC-12075-1] c 32 N77-31350
- Fiber optic multiplex optical transmission system  
[NASA-CASE-KSC-11047-1] c 74 N78-14889
- Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310
- Precise RF timing signal distribution to remote stations --- fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186
- Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349
- SIGNATURE ANALYSIS**
- Multispectral imaging and analysis system --- using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288
- Optical signature generating and correlating apparatus  
[NASA-CASE-NPO-15226-1] c 74 N81-19899
- SILANES**
- Elastomeric silazane polymers and process for preparing the same Patent  
[NASA-CASE-XMF-04133] c 06 N71-20717
- Process for preparation of dianilinosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230
- Process for preparation of high-molecular-weight polyaryloxysilanes Patent  
[NASA-CASE-XMF-08674] c 06 N71-28807
- Oxygen post-treatment of plastic surface coated with plasma polymerized silicon-containing monomers  
[NASA-CASE-ARC-10915-2] c 27 N79-18052
- Thermal control coatings based on trialkoxysilane hydrolysate binders --- tolerance to ultraviolet radiation in vacuum  
[NASA-CASE-MFS-25620-1] c 24 N82-11118
- Thermal protection system  
[NASA-CASE-MSC-18796-1] c 24 N82-26389
- SILICA GEL**
- Gels as battery separators for soluble electrode cells  
[NASA-CASE-LEW-12364-1] c 44 N77-22606
- SILICA GLASS**
- Non-toxic invert analog glass compositions of high modulus  
[NASA-CASE-HQN-10328-2] c 27 N82-29454
- High modulus rare earth and beryllium containing silicate glass compositions --- for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455
- SILICATES**
- Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979
- Alkali-metal silicate binders and methods of manufacture  
[NASA-CASE-GSC-12303-1] c 24 N79-31347
- SILICIDES**
- Silicide coatings for refractory metals Patent  
[NASA-CASE-XLE-10910] c 18 N71-29040
- Fused silicide coatings containing discrete particles for protecting niobium alloys --- used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229
- SILICON**
- Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560
- Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292
- Silicon solar cell with cover glass bonded to cell by metal pattern Patent  
[NASA-CASE-XLE-08569] c 03 N71-23449
- Covered silicon solar cells and method of manufacture --- with polymeric films  
[NASA-CASE-LEW-11065-2] c 44 N76-14600
- Method of controlling defect orientation in silicon crystal ribbon growth  
[NASA-CASE-NPO-13918-1] c 76 N79-11920
- Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229
- Method of producing silicon --- gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231
- System for slicing silicon wafers  
[NASA-CASE-NPO-14406-1] c 37 N80-29703
- Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389
- Electromagnetic process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N81-19944
- Scriber for silicon wafers  
[NASA-CASE-NPO-15539-1] c 37 N82-11469

- A method of increasing minority carrier lifetime in silicon web or the like --- VLSI semiconductor devices and high performance solar cells  
[NASA-CASE-NPO-15530-1] c 76 N82-24973
- Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N82-26629
- Process and apparatus for growing a crystal ribbon --- for use in photovoltaic cells  
[NASA-CASE-NPO-15629-1] c 44 N82-26779
- Method of protecting a surface with a silicon-slurry/aluminate coating --- coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441
- SILICON CARBIDES**
- A method for the deposition of beta-silicon carbide by isopitaxy  
[NASA-CASE-ERC-10120] c 26 N69-33482
- Production of high purity silicon carbide Patent  
[NASA-CASE-XLA-00158] c 26 N70-36805
- Apparatus for producing high purity silicon carbide crystals Patent  
[NASA-CASE-XLA-02057] c 26 N70-40015
- Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c 76 N76-25049
- Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 76 N79-23798
- High temperature silicon carbide impregnated insulating fabrics --- filling the gaps between space shuttle tiles  
[NASA-CASE-MSC-18832-1] c 24 N82-26388
- SILICON COMPOUNDS**
- Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607
- Polymerizable disilanes having in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979-2] c 06 N73-32030
- Infusible silazane polymer and process for producing same --- protective coatings  
[NASA-CASE-XMF-02526-1] c 27 N79-21190
- SILICON CONTROLLED RECTIFIERS**
- Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146
- Transient-compensated SCR inverter  
[NASA-CASE-XLA-08507] c 09 N69-39984
- Reversible ring counter employing cascaded single SCR stages Patent  
[NASA-CASE-XGS-01473] c 09 N71-10673
- SCR blocking pulse gate amplifier Patent  
[NASA-CASE-XLA-07497] c 09 N71-12514
- SILICON DIOXIDE**
- Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906
- Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984
- Method and apparatus for stable silicon dioxide layers on silicon grown in silicon nitride ambient  
[NASA-CASE-ERC-10073-1] c 24 N74-19769
- Silica reusable surface insulation  
[NASA-CASE-ARC-10721-1] c 27 N76-22376
- Two-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-1] c 27 N76-22377
- Transmitting and reflecting diffuser --- using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879
- Field effect transistor and method of construction thereof  
[NASA-CASE-MFS-23312-1] c 33 N78-27326
- Fibrous refractory composite insulation --- shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062
- Apparatus and method for heating a material in a transparent ampoule --- crystal growth  
[NASA-CASE-MFS-25436-1] c 76 N81-30012
- Castable high temperature refractory materials  
[NASA-CASE-LEW-13080-2] c 27 N82-11210
- Attachment system for silica tiles --- thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456
- SILICON FILMS**
- A method for the deposition of beta-silicon carbide by isopitaxy  
[NASA-CASE-ERC-10120] c 26 N69-33482
- Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659
- SILICON JUNCTIONS**
- Radiation resistant silicon semiconductor devices Patent  
[NASA-CASE-XGS-07801] c 09 N71-12513
- SILICON NITRIDES**
- Method and apparatus for stable silicon dioxide layers on silicon grown in silicon nitride ambient  
[NASA-CASE-ERC-10073-1] c 24 N74-19769
- Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c 44 N77-14580



Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371

**SILICON OXIDES**  
Three-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c 27 N76-23426

**SILICON POLYMERS**  
Oxygen post-treatment of plastic surface coated with plasma polymerized silicon-containing monomers  
[NASA-CASE-ARC-10915-2] c 27 N79-18052

**SILICON RADIATION DETECTORS**  
Thin window, drifted silicon, charged particle detector  
[NASA-CASE-XLE-10529] c 14 N69-23191  
Biomedical radiation detecting probe Patent  
[NASA-CASE-XMS-01177] c 05 N71-19440

**SILICON TRANSISTORS**  
Tungsten contacts on silicon substrates  
[NASA-CASE-GSC-10695-1] c 09 N72-25259  
Method and apparatus for detecting surface ions on silicon diodes and transistors  
[NASA-CASE-ERC-10325] c 15 N72-25457

**SILICONE RESINS**  
Vacuum pressure molding technique  
[NASA-CASE-LAR-10073-1] c 37 N76-24575

**SILICONES**  
Silicone containing solid propellant  
[NASA-CASE-NPO-14477-1] c 28 N80-28536

**SILICONIZING**  
Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00284] c 15 N71-16075

**SILOXANES**  
Synthesis of siloxane-containing epoxy polymers Patent  
[NASA-CASE-MFS-13994-1] c 06 N71-11240  
Method of producing alternating ether siloxane copolymers Patent  
[NASA-CASE-XMF-02584] c 06 N71-20905  
Siloxane containing epoxide compounds  
[NASA-CASE-MFS-13994-2] c 06 N72-25148  
Silphenylenesiloxane polymers having in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979] c 06 N72-25151  
Low outgassing polydimethylsiloxane material and preparation thereof  
[NASA-CASE-GSC-11358-1] c 06 N73-26100  
Thermal protection system  
[NASA-CASE-MSC-18796-1] c 24 N82-26389

**SILVER**  
Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c 05 N72-25121

**SILVER ALLOYS**  
Brazing alloy composition  
[NASA-CASE-XMF-06053] c 26 N75-27126

**SILVER CHLORIDES**  
Electrode for biological recording  
[NASA-CASE-XMS-02872] c 05 N69-21925  
Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735

**SILVER COMPOUNDS**  
Water management system and an electrolytic cell therefor Patent  
[NASA-CASE-MSC-10960-1] c 03 N71-24718

**SILVER ZINC BATTERIES**  
Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c 03 N71-29129  
Additive for zinc electrodes  
[NASA-CASE-LEW-13286-1] c 44 N81-27597

**SIMULATORS**  
Method and apparatus of simulating zero gravity conditions Patent  
[NASA-CASE-MFS-12750] c 27 N71-16223  
Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606  
Waveform simulator Patent  
[NASA-CASE-NPO-10251] c 10 N71-27365  
Laser Doppler velocity simulator — to induce frequency shift  
[NASA-CASE-LAR-12176-1] c 36 N80-16321

**SINE SERIES**  
Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-10503-1] c 09 N72-21248  
Function generator for synthesizing complex vibration mode patterns  
[NASA-CASE-LAR-10310-1] c 10 N73-20253  
Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 44 N82-24716

**SINE WAVES**  
Waveform simulator Patent  
[NASA-CASE-NPO-10251] c 10 N71-27365  
Wide band doubler and sine wave quadrature generator  
[NASA-CASE-NPO-11133] c 10 N72-20223  
Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-11389-1] c 33 N77-26387

**SINGLE CRYSTALS**

Production of high purity silicon carbide Patent  
[NASA-CASE-XLA-00158] c 26 N70-36805  
Fabrication of single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c 09 N72-22199  
Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c 35 N75-13213  
Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c 25 N75-26043  
Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910  
Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 76 N79-23798

**SINTERING**

Condenser - Separator  
[NASA-CASE-XLA-08645] c 15 N69-21465  
Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468  
Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N82-26575

**SIZE (DIMENSIONS)**

Apparatus for producing metal powders  
[NASA-CASE-XLE-06461-2] c 17 N72-28535

**SIZE DETERMINATION**

Impact measuring technique  
[NASA-CASE-LAR-10913] c 14 N72-16282  
Small conductive particle sensor — microfiber size determination  
[NASA-CASE-LAR-12552-1] c 35 N82-11431

**SIZE SEPARATION**

Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-2] c 15 N71-26148  
Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036

**SIZING (SHAPING)**

Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114] c 15 N71-17650

**SIZING SCREENS**

Method of making screen by casting Patent  
[NASA-CASE-XLE-00953] c 15 N71-15966  
Screen particle separator  
[NASA-CASE-XNP-09770-2] c 15 N72-22483

**SKEWNESS**

Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c 08 N71-19420  
Automatic character skew and spacing checking network — of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c 33 N76-18353

**SKID LANDINGS**

Nose gear steering system for vehicle with main skids Patent  
[NASA-CASE-XLA-01804] c 02 N70-34160

**SKIN (ANATOMY)**

Process for conditioning tanned sharkskin and articles made therefrom Patent  
[NASA-CASE-XMS-09691-1] c 18 N71-15545  
Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738  
Medical diagnosis system and method with multispectral imaging — depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783

**SKIN (STRUCTURAL MEMBER)**

Flexibly connected support and skin Patent  
[NASA-CASE-XLA-01027] c 31 N71-24035  
Fire extinguishing apparatus having a slidable mass for a penetrator nozzle — for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137

**SKIN FRICTION**

Skin friction measuring device for aircraft  
[NASA-CASE-FRC-11029-1] c 06 N81-17057  
Dual-beam skin friction interferometer — portable equipment  
[NASA-CASE-ARC-11354-1] c 36 N81-29415  
Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470

**SKIN TEMPERATURE (BIOLOGY)**

Thermistor holder for skin temperature measurements  
[NASA-CASE-ARC-10855-1] c 52 N77-10780

**SKIN TEMPERATURE (NON-BIOLOGICAL)**

Heat flux measuring system Patent  
[NASA-CASE-XFR-03802] c 33 N71-23085

**SKIPTS**

Inflatable transpiration cooled nozzle  
[NASA-CASE-MFS-20619] c 28 N72-11708

**SKY BRIGHTNESS**

Cloud cover sensor  
[NASA-CASE-NPO-14936-1] c 47 N80-26992

**SLEEP**

EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MSC-13282-1] c 05 N71-24729

**SLEEVES**

Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c 15 N71-22877  
System for enhancing tool-exchange capabilities of a portable wrench  
[NASA-CASE-MFS-22283-1] c 37 N75-33395  
Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772  
Fire extinguishing apparatus having a slidable mass for a penetrator nozzle — for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137

**SLENDER BODIES**

A support technique for vertically oriented launch vehicles  
[NASA-CASE-XLA-02704] c 11 N69-21540

**SLENDER WINGS**

Leading edge vortex flaps for drag reduction — during subsonic flight  
[NASA-CASE-LAR-12750-1] c 02 N81-19016

**SLICING**

Method and apparatus for slicing crystals  
[NASA-CASE-GSC-12291-1] c 76 N80-18951  
System for slicing silicon wafers  
[NASA-CASE-NPO-14406-1] c 37 N80-29703  
Scriber for silicon wafers  
[NASA-CASE-NPO-15539-1] c 37 N82-11469  
Improved ingot slicing machine  
[NASA-CASE-NPO-15483-1] c 37 N82-28642  
Workpiece positioning vise  
[NASA-CASE-GSC-12762-1] c 37 N82-29604

**SLIDING CONTACT**

Electrical connector pin with wiping action  
[NASA-CASE-XMF-04238] c 09 N69-39734  
Continuous turning slip ring assembly Patent  
[NASA-CASE-XMF-01049] c 15 N71-23049

**SLIDING FRICTION**

Bearing material — composite material with low friction surface for rolling or sliding contact  
[NASA-CASE-LEW-11930-1] c 24 N76-22309

**SLIP CASTING**

Process of casting heavy slips Patent  
[NASA-CASE-XLE-00106] c 15 N71-16076

**SLITS**

Slit regulated gas journal bearing Patent  
[NASA-CASE-XNP-00476] c 15 N70-38620  
Method of fabricating an object with a thin wall having a precisely shaped slit  
[NASA-CASE-LAR-10409-1] c 31 N74-21059  
Dual acting slit control mechanism  
[NASA-CASE-LAR-11370-1] c 35 N80-28686

**SLOPES**

Penetrometer — for determining load bearing characteristics of inclined surfaces  
[NASA-CASE-NPO-11103-1] c 35 N77-27367  
Family of airfoil shapes for rotating blades — for increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 05 N82-33372

**SLOT ANTENNAS**

Virtual wall slot circularly polarized planar array antenna  
[NASA-CASE-NPO-10301] c 07 N72-11148  
Omnidirectional slot antenna for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c 09 N72-25247  
Circularly polarized antenna  
[NASA-CASE-ERC-10214] c 09 N72-31235  
Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c 32 N74-20864  
Horn antenna having V-shaped corrugated slots  
[NASA-CASE-LAR-11112-1] c 32 N76-15330  
Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558

**SLOTS**

Belleville spring assembly with elastic guides  
[NASA-CASE-XNP-09452] c 15 N69-27504  
Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110  
Fine adjustment mount  
[NASA-CASE-MFS-20249] c 15 N72-11386  
Method and tool for machining a transverse slot about a bore  
[NASA-CASE-LAR-11855-1] c 37 N81-14319

**SLUDGE**

Sewage sludge additive  
[NASA-CASE-NPO-13877-1] c 45 N82-11634

**SLURRY PROPELLANTS**

Apparatus for making a metal slurry product Patent  
[NASA-CASE-XLE-00010] c 15 N70-33382



## SMOKE

- Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852  
Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17656  
Smoke generator  
[NASA-CASE-ARC-10905-1] c 37 N77-13418

## SODIUM CHLORIDES

- Diffuse reflective coating  
[NASA-CASE-GSC-11214-1] c 06 N73-13128  
Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644

## SODIUM VAPOR

- Method of producing silicon --- gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231

## SOFT LANDING

- Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c 15 N70-34861  
Space craft soft landing system Patent  
[NASA-CASE-XMF-02108] c 31 N70-36845  
Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-09881] c 31 N71-16085

## SOFT LANDING SPACECRAFT

- Pivotal shock absorbing pad assembly Patent  
[NASA-CASE-XMF-03856] c 31 N70-34159

## SOIL MECHANICS

- Penetrometer --- for determining load bearing characteristics of inclined surfaces  
[NASA-CASE-NPO-11103-1] c 35 N77-27367

## SOIL MOISTURE

- Radar target for remotely sensing hydrological phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498

## SOIL SCIENCE

- Soil penetrometer  
[NASA-CASE-XNP-05530] c 14 N73-32321  
System for plotting subsoil structure and method therefor  
[NASA-CASE-NPO-14191-1] c 31 N80-32584

## SOILS

- Screen particle separator  
[NASA-CASE-XNP-09770-2] c 15 N72-22483  
Burrowing apparatus  
[NASA-CASE-XNP-07169] c 15 N73-32362  
Remote sensing of vegetation and soil using microwave ellipsometry  
[NASA-CASE-GSC-11976-1] c 43 N78-10529

## SOL-GEL PROCESSES

- Alkali-metal silicate binders and methods of manufacture  
[NASA-CASE-GSC-12303-1] c 24 N79-31347

## SOLAR ACTIVITY

- Method and apparatus for measuring solar activity and atmospheric radiation effects  
[NASA-CASE-ERC-10276] c 14 N73-26432

## SOLAR ARRAYS

- Deployable solar cell array  
[NASA-CASE-NPO-10883] c 31 N72-22874  
Use of unilluminated solar cells as shunt diodes for a solar array  
[NASA-CASE-GSC-10344-1] c 03 N72-27053  
Solar energy powered heliostats  
[NASA-CASE-GSC-10945-1] c 21 N72-31637  
Method of making silicon solar cell array --- and mounting on flexible substrate  
[NASA-CASE-LEW-11069-1] c 44 N74-14784  
Solar cell shingle  
[NASA-CASE-LEW-12587-1] c 44 N77-31601  
Hexagon solar power panel  
[NASA-CASE-NPO-12148-1] c 44 N78-27515  
Solar array strip and a method for forming the same  
[NASA-CASE-NPO-13652-1] c 44 N79-17314  
Closed Loop solar array-ion thruster system with power control circuitry  
[NASA-CASE-LEW-12780-1] c 20 N79-20179  
Bonding machine for forming a solar array strip  
[NASA-CASE-NPO-13652-2] c 44 N79-24431  
Double-sided solar cell package  
[NASA-CASE-NPO-14199-1] c 44 N79-25482  
Method of construction of a multi-cell solar array  
[NASA-CASE-MFS-23540-1] c 44 N79-26475  
Method for forming a solar array strip  
[NASA-CASE-NPO-13652-3] c 44 N80-14474  
Electrical rotary joint apparatus for large space structures  
[NASA-CASE-MFS-23981-1] c 33 N81-19394
- SOLAR CELLS**  
Method for producing a solar cell having an integral protective covering  
[NASA-CASE-XGS-04531] c 03 N69-24267

- Radiation direction detector including means for compensating for photocell aging Patent  
[NASA-CASE-XLA-00183] c 14 N70-40239  
Attitude control for spacecraft Patent  
[NASA-CASE-XNP-02982] c 31 N70-41855  
Voltage-current characteristic simulator Patent  
[NASA-CASE-XMS-01554] c 10 N71-10578  
Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607  
Solar cell including second surface mirrors Patent  
[NASA-CASE-NPO-10109] c 03 N71-11049  
Solar battery with interconnecting means for plural cells Patent  
[NASA-CASE-XNP-06506] c 03 N71-11050  
Solar cell submodule Patent  
[NASA-CASE-XNP-05821] c 03 N71-11056  
Interconnection of solar cells Patent  
[NASA-CASE-XGS-01475] c 03 N71-11058  
Solar cell matrix Patent  
[NASA-CASE-NPO-10821] c 03 N71-19545  
Roll-up solar array Patent  
[NASA-CASE-NPO-10188] c 03 N71-20273  
Method of making electrical contact on silicon solar cell and resultant product Patent  
[NASA-CASE-XLE-04787] c 03 N71-20492  
Solar cell mounting Patent  
[NASA-CASE-XNP-00826] c 03 N71-20895  
Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027  
Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292  
Protection of serially connected solar cells against open circuits by the use of shunting diode Patent  
[NASA-CASE-XLE-04535] c 03 N71-23354  
Silicon solar cell with cover glass bonded to cell by metal pattern Patent  
[NASA-CASE-XLE-08569] c 03 N71-23449  
Semiconductor material and method of making same Patent  
[NASA-CASE-XLE-02798] c 26 N71-23654  
Method of attaching a cover glass to a silicon solar cell Patent  
[NASA-CASE-XLE-08569-2] c 03 N71-24681  
Solar panel fabrication Patent  
[NASA-CASE-XNP-03413] c 03 N71-26726  
Solar cell Patent  
[NASA-CASE-ARC-10050] c 03 N71-33409  
Solar cell matrix  
[NASA-CASE-NPO-11190] c 03 N71-34044  
Recovery of radiation damaged solar cells through thermal annealing  
[NASA-CASE-XGS-04047-2] c 03 N72-11062  
Optimum performance spacecraft solar cell system  
[NASA-CASE-GSC-10669-1] c 03 N72-20031  
Solar cell assembly test method  
[NASA-CASE-NPO-10401] c 03 N72-20033  
Solid state matrices  
[NASA-CASE-NPO-10591] c 03 N72-22041  
Solar cell panels with light transmitting plate  
[NASA-CASE-NPO-10747] c 03 N72-22042  
Method of coating solar cell with borosilicate glass and resultant product  
[NASA-CASE-GSC-11514-1] c 03 N72-24037  
Apparatus for applying cover slides  
[NASA-CASE-NPO-10575] c 03 N72-25019  
Use of unilluminated solar cells as shunt diodes for a solar array  
[NASA-CASE-GSC-10344-1] c 03 N72-27053  
Stacked solar cell arrays  
[NASA-CASE-NPO-11771] c 03 N73-20040  
Method of making silicon solar cell array --- and mounting on flexible substrate  
[NASA-CASE-LEW-11069-1] c 44 N74-14784  
Covered silicon solar cells and method of manufacture --- with polymers films  
[NASA-CASE-LEW-11065-2] c 44 N78-14600  
Fabrication of polycrystalline solar cells on low-cost substrates  
[NASA-CASE-GSC-12022-1] c 44 N78-28635  
Solar cell grid patterns  
[NASA-CASE-NPO-13087-2] c 44 N76-31666  
Photovoltaic cell array  
[NASA-CASE-MFS-22458-1] c 44 N77-10635  
Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c 44 N77-14580  
Solar cell assembly --- for use under high intensity illumination  
[NASA-CASE-LEW-11549-1] c 44 N77-19571  
High voltage, high current Schottky barrier solar cell  
[NASA-CASE-NPO-13482-1] c 44 N78-13526  
Shunt regulation electric power system  
[NASA-CASE-GSC-10135] c 33 N78-17296

- Process for utilizing low-cost graphite substrates for polycrystalline solar cells  
[NASA-CASE-GSC-12022-2] c 44 N78-24609  
Method of making encapsulated solar cell modules  
[NASA-CASE-LEW-12185-1] c 44 N78-25528  
Method for producing solar energy panels by automation  
[NASA-CASE-LEW-12541-1] c 44 N78-25529  
Hexagon solar power panel  
[NASA-CASE-NPO-12148-1] c 44 N78-27515  
Application of semiconductor diffusants to solar cells by screen printing  
[NASA-CASE-LEW-12775-1] c 44 N79-11468  
Method and apparatus for measuring minority carrier lifetimes and bulk diffusion length in P-N junction solar cells  
[NASA-CASE-NPO-14100-1] c 44 N79-12541  
Back wall solar cell  
[NASA-CASE-LEW-12236-2] c 44 N79-14528  
Method for fabricating solar cells having integrated collector grids  
[NASA-CASE-LEW-12819-2] c 44 N79-18444  
Solar cell module assembly jig  
[NASA-CASE-XGS-00829-1] c 44 N79-19447  
Double-sided solar cell package  
[NASA-CASE-NPO-14199-1] c 44 N79-25482  
Solar cell with improved N-region contact and method of forming the same  
[NASA-CASE-NPO-14205-1] c 44 N79-31752  
Solar cell module  
[NASA-CASE-NPO-14467-1] c 44 N79-31753  
Self-reconfiguring solar cell system  
[NASA-CASE-LEW-12586-1] c 44 N80-14472  
Driver for solar cell I-V characteristic plots  
[NASA-CASE-NPO-14096-1] c 44 N80-18551  
Solar cell angular position transducer  
[NASA-CASE-LAR-11999-1] c 44 N80-18552  
Method of mitigating titanium impurities effects in p-type silicon material for solar cells  
[NASA-CASE-NPO-14635-1] c 44 N80-24741  
Induced junction solar cell and method of fabrication  
[NASA-CASE-NPO-13786-1] c 44 N80-29835  
Solar cell system having alternating current output  
[NASA-CASE-LEW-12806-2] c 44 N81-12542  
Method and apparatus for fabricating improved solar cell modules  
[NASA-CASE-NPO-14416-1] c 44 N81-14389  
Copper doped polycrystalline silicon solar cell  
[NASA-CASE-NPO-14670-1] c 44 N81-19558  
Heat transparent high intensity high efficiency solar cell  
[NASA-CASE-LEW-12892-1] c 44 N81-27598  
Schottky barrier solar cell  
[NASA-CASE-NPO-13689-2] c 44 N81-29525  
High voltage V-groove solar cell  
[NASA-CASE-LEW-13401-2] c 44 N82-24717  
Efficiency of silicon solar cells containing chromium  
[NASA-CASE-NPO-15179-1] c 44 N82-26777  
Method of fabricating Schottky Barrier solar cell  
[NASA-CASE-NPO-13689-4] c 44 N82-28780  
Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709  
High voltage planar multi-junction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764

## SOLAR COLLECTORS

- Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c 03 N69-21539  
Device for directionally controlling electromagnetic radiation Patent  
[NASA-CASE-XLE-01716] c 09 N70-40234  
Roll-up solar array Patent  
[NASA-CASE-NPO-10188] c 03 N71-20273  
Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-28155  
Solar cell Patent  
[NASA-CASE-ARC-10050] c 03 N71-33409  
Mount for continuously orienting a collector dish in a system adapted to perform both diurnal and seasonal solar tracking  
[NASA-CASE-MFS-23267-1] c 35 N77-20401  
Solar cell shingle  
[NASA-CASE-LEW-12587-1] c 44 N77-31601  
Solar energy collection system  
[NASA-CASE-NPO-13810-1] c 44 N77-32582  
Three-dimensional tracking solar energy concentrator and method for making same  
[NASA-CASE-NPO-13736-1] c 44 N77-32583  
Portable linear-focused solar thermal energy collecting system  
[NASA-CASE-NPO-13734-1] c 44 N78-10554  
Solar heating system  
[NASA-CASE-LAR-12009-1] c 44 N78-15560  
Low cost solar energy collection system  
[NASA-CASE-NPO-13579-1] c 44 N78-17460



Selective coating for solar panels — using black chrome and black nickel  
 [NASA-CASE-LEW-12159-1] c 44 N78-19599

Solar cell collector  
 [NASA-CASE-LEW-12552-1] c 44 N78-25527

Non-tracking solar energy collector system  
 [NASA-CASE-NPO-13813-1] c 44 N78-31526

Solar cells having integral collector grids  
 [NASA-CASE-LEW-12819-1] c 44 N79-11467

Method for making an aluminum or copper substrate panel for selective absorption of solar energy  
 [NASA-CASE-MFS-23518-1] c 44 N79-11469

Non-tracking solar energy collector system  
 [NASA-CASE-NPO-13817-1] c 44 N79-11471

Solar cell collector and method for producing same  
 [NASA-CASE-LEW-12552-2] c 44 N79-11472

Electromagnetic radiation energy arrangement — coatings for solar energy absorption and infrared reflection  
 [NASA-CASE-WOO-00428-1] c 32 N79-19186

Horizontally mounted solar collector  
 [NASA-CASE-MFS-23349-1] c 44 N79-23481

Primary reflector for solar energy collection systems and method of making same  
 [NASA-CASE-NPO-13579-3] c 44 N79-24432

Solar energy collection system  
 [NASA-CASE-NPO-13579-2] c 44 N79-24433

Solar concentrator  
 [NASA-CASE-MFS-23727-1] c 44 N80-14473

Combined solar collector and energy storage system  
 [NASA-CASE-LAR-12205-1] c 44 N80-20810

Solar energy receiver for a Stirling engine  
 [NASA-CASE-NPO-14619-1] c 44 N81-17518

Solar tracking system  
 [NASA-CASE-MFS-23999-1] c 44 N81-24520

Method of forming oxide coatings  
 [NASA-CASE-LEW-13132-1] c 44 N81-27616

Automotive absorption air conditioner utilizing solar and motor waste heat  
 [NASA-CASE-NPO-15183-1] c 44 N82-26776

Solar concentrator protective system  
 [NASA-CASE-NPO-15662-1] c 44 N82-28785

**SOLAR ELECTRIC PROPULSION**  
 Closed Loop solar array-on thruster system with power control circuitry  
 [NASA-CASE-LEW-12780-1] c 20 N79-20179

**SOLAR ENERGY**  
 Stacked solar cell arrays  
 [NASA-CASE-NPO-11771] c 03 N73-20040

Solar energy power system — using Freon  
 [NASA-CASE-MFS-21628-1] c 44 N75-32581

Thermostatically controlled non-tracking type solar energy concentrator  
 [NASA-CASE-NPO-13497-1] c 44 N76-14602

Solar photolysis of water  
 [NASA-CASE-NPO-13675-1] c 44 N77-32580

Three-dimensional tracking solar energy concentrator and method for making same  
 [NASA-CASE-NPO-13736-1] c 44 N77-32583

Solar heating system  
 [NASA-CASE-LAR-12009-1] c 44 N78-15560

Method for producing solar energy panels by automation  
 [NASA-CASE-LEW-12541-1] c 44 N78-25529

Method for making an aluminum or copper substrate panel for selective absorption of solar energy  
 [NASA-CASE-MFS-23518-1] c 44 N79-11469

Primary reflector for solar energy collection systems  
 [NASA-CASE-NPO-13579-4] c 44 N79-14529

Method of construction of a multi-cell solar array  
 [NASA-CASE-MFS-23540-1] c 44 N79-26475

Solar cell module  
 [NASA-CASE-NPO-14467-1] c 44 N79-31753

Solar energy modulator  
 [NASA-CASE-NPO-15388-1] c 44 N82-10496

A solar pumped laser  
 [NASA-CASE-LAR-12870-1] c 36 N82-25497

**SOLAR ENERGY ABSORBERS**  
 Panel for selectively absorbing solar thermal energy and the method of producing said panel  
 [NASA-CASE-MFS-22562-1] c 44 N78-14595

Solar energy absorber  
 [NASA-CASE-MFS-22743-1] c 44 N76-22657

Solar energy trap  
 [NASA-CASE-MFS-22744-1] c 44 N76-24696

Solar cell shingle  
 [NASA-CASE-LEW-12587-1] c 44 N77-31601

Low cost solar energy collection system  
 [NASA-CASE-NPO-13579-1] c 44 N78-17460

Electromagnetic radiation energy arrangement — coatings for solar energy absorption and infrared reflection  
 [NASA-CASE-WOO-00428-1] c 32 N79-19186

Aluminum or copper substrate panel for selective absorption of solar energy  
 [NASA-CASE-MFS-23518-3] c 44 N80-16452

A stable density-stratification solar pond  
 [NASA-CASE-NPO-15419-1] c 44 N81-27599

**SOLAR ENERGY CONVERSION**  
 Solar energy power system  
 [NASA-CASE-MFS-21628-2] c 44 N76-23675

High voltage, high current Schottky barrier solar cell  
 [NASA-CASE-NPO-13482-1] c 44 N78-13526

Process for utilizing low-cost graphite substrates for polycrystalline solar cells  
 [NASA-CASE-GSC-12022-2] c 44 N78-24609

Solar photolysis of water  
 [NASA-CASE-NPO-14126-1] c 44 N79-11470

Thermal energy transformer  
 [NASA-CASE-NPO-14058-1] c 44 N79-18443

Solar concentrator  
 [NASA-CASE-MFS-23727-1] c 44 N80-14473

Copper doped polycrystalline silicon solar cell  
 [NASA-CASE-NPO-14670-1] c 44 N81-19558

Solar driven liquid metal MHD power generator  
 [NASA-CASE-LAR-12495-1] c 44 N81-32609

Solar energy control system — temperature measurement  
 [NASA-CASE-MFS-25287-1] c 44 N82-18686

Solar engine  
 [NASA-CASE-LAR-12148-1] c 44 N82-24640

Solar powered actuator with continuously variable auxiliary power control  
 [NASA-CASE-MFS-25637-1] c 44 N82-26780

Wind and solar powered turbine  
 [NASA-CASE-NPO-15496-1] c 44 N82-28784

**SOLAR FLUX DENSITY**  
 Solar energy modulator  
 [NASA-CASE-NPO-15388-1] c 44 N82-10496

**SOLAR FURNACES**  
 High temperature lens construction Patent  
 [NASA-CASE-XNP-04111] c 14 N71-15622

**SOLAR GENERATORS**  
 GaAs solar detector using manganese as a doping agent Patent  
 [NASA-CASE-XNP-01328] c 26 N71-18064

Wind and solar powered turbine  
 [NASA-CASE-NPO-15496-1] c 44 N82-28784

**SOLAR GRAVITATION**  
 Means for visually indicating flight paths of vehicles between the Earth, Venus, and Mercury Patent  
 [NASA-CASE-XNP-00708] c 14 N70-35394

**SOLAR HEATING**  
 Portable linear-focused solar thermal energy collecting system  
 [NASA-CASE-NPO-13734-1] c 44 N78-10554

Solar heating system  
 [NASA-CASE-LAR-12009-1] c 44 N78-15560

Combined solar collector and energy storage system  
 [NASA-CASE-LAR-12205-1] c 44 N80-20810

Multi-channel temperature measurement amplification system — solar heating systems  
 [NASA-CASE-MFS-23775-1] c 44 N82-16474

Solar heated fluidized bed gasification system  
 [NASA-CASE-NPO-15071-1] c 44 N82-16475

Solar energy control system — temperature measurement  
 [NASA-CASE-MFS-25287-1] c 44 N82-18686

**SOLAR OBSERVATORIES**  
 Solar optical telescope dome control system Patent  
 [NASA-CASE-MSC-10966] c 14 N71-19568

**SOLAR PONDS (HEAT STORAGE)**  
 Solar pond  
 [NASA-CASE-NPO-13581-2] c 44 N78-31525

A stable density-stratification solar pond  
 [NASA-CASE-NPO-15419-1] c 44 N81-27599

Saltless solar pond  
 [NASA-CASE-NPO-15808-1] c 44 N82-29714

**SOLAR POSITION**  
 Sun angle calculator  
 [NASA-CASE-MSC-12617-1] c 35 N76-29552

Solar tracking system  
 [NASA-CASE-MFS-23999-1] c 44 N81-24520

**SOLAR POWERED AIRCRAFT**  
 Solar powered aircraft  
 [NASA-CASE-LAR-12615-1] c 05 N81-32138

**SOLAR RADIATION**  
 Space simulator Patent  
 [NASA-CASE-XNP-00459] c 11 N70-38675

Solar vane actuator Patent  
 [NASA-CASE-XNP-05535] c 14 N71-23040

Compact solar still Patent  
 [NASA-CASE-XMS-04533] c 15 N71-23086

Wide angle sun sensor — consisting of cylinder, insulation and pair of detectors  
 [NASA-CASE-NPO-13327-1] c 35 N75-23910

Particulate and solar radiation stable coating for spacecraft  
 [NASA-CASE-LAR-10805-2] c 34 N77-18382

Solar concentrator protective system  
 [NASA-CASE-NPO-15662-1] c 44 N82-28785

**SOLAR RADIATION SHIELDING**  
 High temperature glass thermal control structure and coating  
 [NASA-CASE-ARC-11164-1] c 27 N82-10228

**SOLAR RADIO EMISSION**  
 Sidereal frequency generator Patent  
 [NASA-CASE-XGS-02610] c 14 N71-23174

**SOLAR REFLECTORS**  
 Foldable solar concentrator Patent  
 [NASA-CASE-XLA-04622] c 03 N70-41580

Solar cell including second surface mirrors Patent  
 [NASA-CASE-NPO-10109] c 03 N71-11049

Method and apparatus for making curved reflectors Patent  
 [NASA-CASE-XLE-08917] c 15 N71-15597

Thermal pump-compressor for space use Patent  
 [NASA-CASE-XLA-00377] c 33 N71-17610

Apparatus for making curved reflectors Patent  
 [NASA-CASE-XLE-08917-2] c 15 N71-24836

Inorganic thermal control coatings  
 [NASA-CASE-MFS-20011] c 18 N72-22566

Lightweight reflector assembly  
 [NASA-CASE-NPO-13707-1] c 74 N77-28933

Primary reflector for solar energy collection systems  
 [NASA-CASE-NPO-13579-4] c 44 N79-14529

Primary reflector for solar energy collection systems and method of making same  
 [NASA-CASE-NPO-13579-3] c 44 N79-24432

Solar energy collection system  
 [NASA-CASE-NPO-13579-2] c 44 N79-24433

**SOLAR SAILS**  
 Strong thin membrane structure — solar sails  
 [NASA-CASE-NPO-14021-2] c 27 N80-16163

Speed control device for a heavy duty shaft — solar sails for spacecraft propulsion  
 [NASA-CASE-NPO-14170-1] c 37 N81-15364

**SOLAR SENSORS**  
 Plurality of photosensitive cells on a pyramidal base for planetary trackers  
 [NASA-CASE-XNP-04180] c 07 N69-39736

Space vehicle attitude control Patent  
 [NASA-CASE-XNP-00465] c 21 N70-35395

Sun tracker with rotatable plane-parallel plate and two photocells Patent  
 [NASA-CASE-XGS-01159] c 21 N71-10678

Solar sensor having coarse and fine sensing with matched preirradiated cells and method of selecting cells Patent  
 [NASA-CASE-XLA-01584] c 14 N71-23269

Sun direction detection system  
 [NASA-CASE-NPO-13722-1] c 74 N77-22951

Sun tracking solar energy collector  
 [NASA-CASE-NPO-13921-1] c 44 N79-14526

Solar tracking system  
 [NASA-CASE-MFS-23999-1] c 44 N81-24520

Sun sensing guidance system for high altitude aircraft  
 [NASA-CASE-FRC-11052-1] c 04 N82-23231

**SOLAR SIMULATORS**  
 High temperature lens construction Patent  
 [NASA-CASE-XNP-04111] c 14 N71-15622

High powered arc electrodes — producing solar simulator radiation  
 [NASA-CASE-LEW-11162-1] c 33 N74-12913

**SOLDERED JOINTS**  
 Soldering device Patent  
 [NASA-CASE-XLA-08911] c 15 N71-27214

**SOLDERING**  
 Solder flux which leaves corrosion-resistant coating Patent  
 [NASA-CASE-XNP-03459-2] c 18 N71-15688

Soldering with solder flux which leaves corrosion resistant coating Patent  
 [NASA-CASE-XNP-03459] c 15 N71-21078

Method of plating copper on aluminum Patent  
 [NASA-CASE-XLA-08966-1] c 17 N71-25903

Resistance soldering apparatus  
 [NASA-CASE-GSC-10913] c 15 N72-22491

Positive contact resistance soldering unit  
 [NASA-CASE-KSC-10242] c 15 N72-23497

Bonding machine for forming a solar array strip  
 [NASA-CASE-NPO-13652-2] c 44 N79-24431

**SOLDERS**  
 Method of coating circuit paths on printed circuit boards with solder Patent  
 [NASA-CASE-XMF-01599] c 09 N71-20705

Method for attaching a fused-quartz mirror to a conductive metal substrate  
 [NASA-CASE-MFS-23405-1] c 26 N77-29260

**SOLENOID VALVES**  
 Two-step rocket engine bipropellant valve Patent  
 [NASA-CASE-XMS-04890-1] c 15 N70-22192

Automatic recording McLeod gauge Patent  
 [NASA-CASE-XLE-03280] c 14 N71-23093

Solenoid valve including guide for armature and valve member  
 [NASA-CASE-GSC-10607-1] c 15 N72-20442



- Remote fire stack igniter — with solenoid-controlled valve  
[NASA-CASE-MFS-21675-1] c 25 N74-33378
- Automatically operable self-leveling load table  
[NASA-CASE-MFS-22039-1] c 09 N75-12968
- ### SOLENOIDS
- Solenoid construction Patent  
[NASA-CASE-XNP-01951] c 09 N70-41929
- Drive circuit for minimizing power consumption in inductive load Patent  
[NASA-CASE-NPO-10716] c 09 N71-24892
- Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly — for use with cameras mounted in satellites  
[NASA-CASE-GSC-11560-1] c 33 N74-20861
- Sprag solenoid brake — development and operations of electrically controlled brake  
[NASA-CASE-MFS-21846-1] c 37 N74-26976
- Low temperature latching solenoid  
[NASA-CASE-MSC-18106-1] c 33 N82-11357
- Precision reciprocating filament chopper  
[NASA-CASE-LAR-12564-2] c 37 N82-18604
- ### SOLID CRYOGEN COOLING
- Cooling by conversion of para to ortho-hydrogen  
[NASA-CASE-GSC-12770-1] c 34 N82-10358
- ### SOLID ELECTRODES
- Polymenc electrolytic hygrometer  
[NASA-CASE-NPO-13948-1] c 35 N78-25391
- ### SOLID LUBRICANTS
- Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400
- Method of lubricating rolling element bearings Patent  
[NASA-CASE-XLE-09527] c 15 N71-17688
- Inorganic solid film lubricants Patent  
[NASA-CASE-XMF-03988] c 15 N71-21403
- Rolling element bearings Patent  
[NASA-CASE-XLE-09527-2] c 15 N71-26189
- Method of making bearing materials — self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11830-4] c 24 N79-17916
- ### SOLID PHASES
- Solid electrolyte cell  
[NASA-CASE-NPO-15269-1] c 44 N82-29710
- ### SOLID PROPELLANT IGNITION
- Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c 28 N70-33375
- Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01988] c 27 N71-15634
- Molded composite pyrogen igniter for rocket motors — solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275
- ### SOLID PROPELLANT ROCKET ENGINES
- Spherical solid-propellant rocket motor Patent  
[NASA-CASE-XLA-00105] c 28 N70-33331
- Mandrel for shaping solid propellant rocket fuel into a motor casing Patent  
[NASA-CASE-XLA-00304] c 27 N70-34783
- Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c 28 N70-35381
- Propellant grain for rocket motors Patent  
[NASA-CASE-XGS-03556] c 27 N70-35534
- Apparatus and method for control of a solid fueled rocket vehicle Patent  
[NASA-CASE-XNP-00217] c 28 N70-38181
- Steerable solid propellant rocket motor Patent  
[NASA-CASE-XNP-00234] c 28 N70-38645
- Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779
- Electrical apparatus for detection of thermal decomposition of insulation Patent  
[NASA-CASE-XMF-03968] c 14 N71-27186
- Solid propellant rocket motor  
[NASA-CASE-XNP-03282] c 28 N72-20758
- Solid propellant rocket motor nozzle  
[NASA-CASE-NPO-11458] c 28 N72-23810
- Solid propellant rocket motor  
[NASA-CASE-NPO-11559] c 28 N73-24784
- Space vehicle  
[NASA-CASE-MFS-22734-1] c 18 N75-19329
- Solid propellant rocket motor and method of making same  
[NASA-CASE-XLA-1349] c 20 N77-17143
- Molded composite pyrogen igniter for rocket motors — solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275
- Solid propellant motor  
[NASA-CASE-NPO-11458A] c 20 N78-32179
- ### SOLID PROPELLANTS
- Variable thrust ion engine utilizing thermally decomposable solid fuel Patent  
[NASA-CASE-XMF-00923] c 28 N70-36802
- Means and method of measuring viscoelastic strain Patent  
[NASA-CASE-XNP-01153] c 32 N71-17645
- Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c 14 N71-20461
- Method of forming difunctional polysobutylene  
[NASA-CASE-NPO-10893] c 27 N73-22710
- ### SOLID ROCKET BINDERS
- Solid propellant liner Patent  
[NASA-CASE-XNP-09744] c 27 N71-16392
- Silicone containing solid propellant  
[NASA-CASE-NPO-14477-1] c 28 N80-28536
- ### SOLID ROCKET PROPELLANTS
- Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c 27 N70-41897
- Burning rate control of solid propellants Patent  
[NASA-CASE-XLE-03494] c 27 N71-21819
- Hydrazinium nitroformate propellant stabilized with nitroguanidine  
[NASA-CASE-NPO-12000] c 27 N72-25699
- Hydrazinium nitroformate propellant with saturated polymenc hydrocarbon binder  
[NASA-CASE-NPO-12015] c 27 N73-16764
- Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209
- Casting propellant in rocket engine  
[NASA-CASE-LAR-11995-1] c 28 N77-10213
- Solid propellant rocket motor and method of making same  
[NASA-CASE-XLA-1349] c 20 N77-17143
- High performance ammonium nitrate propellant  
[NASA-CASE-NPO-14260-1] c 28 N79-28342
- Process for the leaching of AP from propellant  
[NASA-CASE-NPO-14109-1] c 28 N80-23471
- Silicone containing solid propellant  
[NASA-CASE-NPO-14477-1] c 28 N80-28536
- ### SOLID STATE
- Solid state chemical source for ammonia beam maser Patent  
[NASA-CASE-XGS-01504] c 16 N70-41578
- ### SOLID STATE DEVICES
- Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500
- Temperature compensated solid state differential amplifier Patent  
[NASA-CASE-XAC-00435] c 09 N70-35440
- Operational integrator Patent  
[NASA-CASE-NPO-10230] c 09 N71-12520
- Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486
- Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897
- Solid state television camera system Patent  
[NASA-CASE-XMF-06092] c 07 N71-24612
- Switching circuit Patent  
[NASA-CASE-XNP-06505] c 10 N71-24799
- Transverse piezoresistance and pinch effect electromechanical transducers Patent  
[NASA-CASE-ERC-10088] c 26 N71-25490
- A solid state acoustic variable time delay line Patent  
[NASA-CASE-ERC-10032] c 10 N71-25900
- Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c 10 N71-26331
- Solid state remote circuit selector switch  
[NASA-CASE-LEW-10387] c 09 N72-22201
- RF controlled solid state switch  
[NASA-CASE-ARC-10136-1] c 09 N72-22202
- Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
[NASA-CASE-NPO-11388] c 03 N72-23048
- Radiation sensitive solid state switch  
[NASA-CASE-NPO-10817-1] c 08 N73-30135
- Full wave modulator-demodulator amplifier apparatus — for generating rectified output signal  
[NASA-CASE-FRC-10072-1] c 33 N74-14939
- Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c 33 N75-27251
- Solid-state current transformer  
[NASA-CASE-MFS-22560-1] c 33 N77-14335
- Space-charge limited solid-state diode  
[NASA-CASE-NPO-13064-1] c 33 N79-11314
- Hermetically sealable package for hybrid solid-state electronic devices and the like  
[NASA-CASE-MSC-20181-1] c 33 N82-28549
- Control means for a solid state crossbar switch  
[NASA-CASE-NPO-15066-1] c 33 N82-29538
- ### SOLID SURFACES
- Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170
- ### SOLID WASTES
- Process of forming catalytic surfaces for wet oxidation reactions  
[NASA-CASE-MSC-14831-1] c 25 N78-10225
- ### SOLID-SOLID INTERFACES
- Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443
- Coal-rock interface detector  
[NASA-CASE-MFS-23725-1] c 43 N79-31706
- ### SOLIDIFICATION
- Containerless melting and rapid solidification apparatus and method  
[NASA-CASE-MFS-25305-1] c 35 N81-16427
- Method and apparatus for supercooling and solidifying substances — containerless melts and space processing  
[NASA-CASE-MFS-25242-1] c 35 N81-24413
- ### SOLIDIFIED GASES
- Cooling by conversion of para to ortho-hydrogen  
[NASA-CASE-GSC-12770-1] c 34 N82-10358
- ### SOLIDS FLOW
- Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401
- Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N82-27087
- ### SOLUBILITY
- Fire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c 18 N71-14014
- Insoluble polyelectrolyte and ion-exchange hollow fiber impregnated therewith  
[NASA-CASE-NPO-13530-1] c 25 N81-17187
- Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 27 N82-28444
- ### SOLUTES
- Specific wavelength colorimeter — for measuring given solute concentration in test sample  
[NASA-CASE-MSC-14081-1] c 35 N74-27860
- ### SOLUTIONS
- Asymmetric polyimide separation membrane and method  
[NASA-CASE-NPO-15431-1] c 25 N81-29178
- ### SOLVENT EXTRACTION
- Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119
- Supercritical multicomponent solvent coal extraction  
[NASA-CASE-NPO-15767-1] c 28 N82-12241
- ### SOLVENT REFINED COAL
- Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 28 N82-26481
- ### SOLVENTS
- Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246
- ### SONAR
- Method for shaping and aiming narrow beams — sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443
- Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376
- ### SONIC BOOMS
- Instrumentation for measurement of aircraft noise and sonic boom  
[NASA-CASE-LAR-11173-1] c 35 N75-19614
- Instrumentation for measuring aircraft noise and sonic boom  
[NASA-CASE-LAR-11476-1] c 07 N76-27232
- ### SORBATES
- Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c 35 N78-19465
- ### SORET COEFFICIENT
- Method of growing composites of the type exhibiting the Soret effect — improved structure of eutectic alloy crystals  
[NASA-CASE-MFS-22926-1] c 24 N77-27187
- ### SOUND GENERATORS
- Ejectable underwater sound source recovery assembly  
[NASA-CASE-LAR-10595-1] c 35 N74-16135
- ### SOUND LOCALIZATION
- Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753
- ### SOUND PRESSURE
- Instrumentation for measurement of aircraft noise and sonic boom  
[NASA-CASE-LAR-11173-1] c 35 N75-19614
- Differential sound level meter  
[NASA-CASE-LAR-12106-1] c 71 N78-14867
- ### SOUND PROPAGATION
- System for plotting subsoil structure and method therefor  
[NASA-CASE-NPO-14191-1] c 31 N80-32584
- ### SOUND RANGING
- Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376
- ### SOUND TRANSDUCERS
- Method for detecting hydrogen gas  
[NASA-CASE-XMF-03873] c 06 N69-39733
- Cosmic dust sensor  
[NASA-CASE-GSC-10503-1] c 14 N72-20381
- Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753
- Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969



- Acoustic system for material transport  
[NASA-CASE-NPO-15453-1] c 71 N82-12889
- SOUND WAVES**
- Phonocardiograph transducer Patent  
[NASA-CASE-XMS-05365] c 14 N71-22993
- Material suspension within an acoustically excited resonant chamber — at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774
- Acoustic energy shaping  
[NASA-CASE-NPO-13802-1] c 71 N76-10837
- Acoustic driving of rotor  
[NASA-CASE-NPO-14005-1] c 71 N79-20827
- Acoustic suspension system  
[NASA-CASE-NPO-15435-1] c 71 N81-27887
- Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 35 N82-24475
- Acoustic particle separation  
[NASA-CASE-NPO-15559-1] c 71 N82-29112
- SOUNDING ROCKETS**
- Altitude control system for sounding rockets Patent  
[NASA-CASE-XGS-01654] c 31 N71-24750
- Method and system for ejecting fairing sections from a rocket vehicle  
[NASA-CASE-GSC-10590-1] c 31 N73-14853
- SPACE CAPSULES**
- Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-36410
- Space capsule Patent  
[NASA-CASE-XLA-01332] c 31 N71-15664
- Space capsule ejection assembly Patent  
[NASA-CASE-XMF-03169] c 31 N71-15675
- SPACE CHARGE**
- Space-charge-limited solid-state diode  
[NASA-CASE-NPO-13064-1] c 33 N79-11314
- SPACE COMMUNICATION**
- Multiple input radio receiver Patent  
[NASA-CASE-XLA-00901] c 07 N71-10775
- Tracking receiver Patent  
[NASA-CASE-XGS-08679] c 10 N71-21473
- Apparatus providing a directive field pattern and attitude sensing of a spin stabilized satellite Patent  
[NASA-CASE-XGS-02607] c 31 N71-23009
- Space communication system for compressed data with a concatenated Reed-Solomon-Viterbi coding channel  
[NASA-CASE-NPO-13545-1] c 32 N77-12240
- SPACE ENVIRONMENT SIMULATION**
- Voltage-current characteristic simulator Patent  
[NASA-CASE-XMS-01554] c 10 N71-10578
- Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635
- Reduced gravity simulator Patent  
[NASA-CASE-XLA-01787] c 11 N71-16028
- Apparatus for measuring electric field strength on the surface of a model vehicle Patent  
[NASA-CASE-XLE-02038] c 09 N71-16086
- Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c 23 N71-16365
- Omni-directional anisotropic molecular trap Patent  
[NASA-CASE-XGS-00783] c 30 N71-17788
- Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c 11 N71-18773
- Mechanical simulator of low gravity conditions Patent  
[NASA-CASE-MFS-10555] c 11 N71-19494
- Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710
- Autogeneration test cell Patent  
[NASA-CASE-KSC-10198] c 11 N71-28629
- Illumination system including a virtual light source Patent  
[NASA-CASE-HQN-10781] c 23 N71-30292
- Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332] c 05 N72-20097
- Diffuser/ejector system for a very high vacuum environment  
[NASA-CASE-MFS-15791-1] c 37 N82-33712
- SPACE ERECTABLE STRUCTURES**
- Flexible foam erectable space structures Patent  
[NASA-CASE-XLA-00686] c 31 N70-34135
- Erectable modular space station Patent  
[NASA-CASE-XLA-00678] c 31 N70-34296
- Manned space station Patent  
[NASA-CASE-XLA-00258] c 31 N70-38676
- Collapsible loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c 07 N70-40202
- Passive communication satellite Patent  
[NASA-CASE-XLA-00210] c 30 N70-40309
- Flexible wing deployment device Patent  
[NASA-CASE-XLA-01220] c 02 N70-41863
- Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035
- Space manufacturing machine Patent  
[NASA-CASE-MFS-20410] c 15 N71-19214
- Roll-up solar array Patent  
[NASA-CASE-NPO-10188] c 03 N71-20273
- Collapsible reflector Patent  
[NASA-CASE-XMS-03454] c 09 N71-20658
- Inflatable support structure Patent  
[NASA-CASE-XLA-01731] c 32 N71-21045
- Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611
- Inflatable tether Patent  
[NASA-CASE-XMS-10993] c 15 N71-28936
- Expandable space frames  
[NASA-CASE-ERC-10365-1] c 31 N73-32749
- Apparatus for assembling space structure  
[NASA-CASE-MFS-23579-1] c 18 N79-11108
- Lightweight structural columns — space erectable trusses  
[NASA-CASE-LAR-12095-1] c 31 N81-25258
- Telescoping columns — parabolic antenna support  
[NASA-CASE-LAR-12195-1] c 31 N81-27324
- SPACE EXPLORATION**
- Vehicle for use in planetary exploration  
[NASA-CASE-NPO-11366] c 11 N73-26238
- SPACE FLIGHT**
- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203
- Television simulation for aircraft and space flight Patent  
[NASA-CASE-XFR-03107] c 09 N71-19449
- SPACE FLIGHT FEEDING**
- Helmet feedport  
[NASA-CASE-XMS-09653] c 54 N78-17680
- SPACE INDUSTRIALIZATION**
- Apparatus for assembling space structure  
[NASA-CASE-MFS-23579-1] c 18 N79-11108
- SPACE MAINTENANCE**
- Thruster maintenance system Patent  
[NASA-CASE-MFS-20325] c 28 N71-27095
- High temperature emittance coatings and coating compositions — repairing damaged space shuttle tiles in space  
[NASA-CASE-MSC-18851-1] c 27 N82-26460
- Hot melt recharge system  
[NASA-CASE-LAR-12881-1] c 27 N82-26464
- Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N82-28640
- Mechanical fastener  
[NASA-CASE-LAR-12738-1] c 18 N82-33419
- SPACE MANUFACTURING**
- Material suspension within an acoustically excited resonant chamber — at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774
- Method for manufacturing mirrors in zero gravity environment  
[NASA-CASE-MSC-12611-1] c 12 N76-15189
- Apparatus for assembling space structure  
[NASA-CASE-MFS-23579-1] c 18 N79-11108
- Structural members, method and apparatus  
[NASA-CASE-MSC-16217-1] c 31 N81-27323
- Self-locking mechanical center joint — for space construction  
[NASA-CASE-LAR-12864-1] c 37 N82-29606
- SPACE MISSIONS**
- Method of planetary atmospheric investigation using a split-trajectory dual flyby mode Patent  
[NASA-CASE-XAC-08494] c 30 N71-15990
- Deep space monitor communication satellite system Patent  
[NASA-CASE-XAC-06029-1] c 31 N71-24813
- A method of delivering a vehicle to earth orbit and returning the reusable portion thereof to earth  
[NASA-CASE-MSC-12391] c 30 N73-12884
- SPACE NAVIGATION**
- Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688
- Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c 21 N73-13644
- Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c 21 N73-19630
- SPACE ORIENTATION**
- Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent  
[NASA-CASE-XGS-00466] c 21 N70-34297
- SPACE PROCESSING**
- Method and apparatus for supercooling and solidifying substances — containless melts and space processing  
[NASA-CASE-MFS-25242-1] c 35 N81-24413
- Exothermic furnace module  
[NASA-CASE-MFS-25707-1] c 35 N82-26631
- SPACE RENDEZVOUS**
- Method and apparatus for securing to a spacecraft Patent  
[NASA-CASE-MFS-11133] c 31 N71-16222
- Apparatus for releasably connecting first and second objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 15 N82-28318
- SPACE SHUTTLE ORBITERS**
- Surface conforming thermal/pressure seal — tail assemblies of space shuttle orbiters  
[NASA-CASE-MSC-18422-1] c 37 N82-16408
- High temperature emittance coatings and coating compositions — repairing damaged space shuttle tiles in space  
[NASA-CASE-MSC-18851-1] c 27 N82-26460
- Television camera video level control system — space shuttle orbiters  
[NASA-CASE-MSC-18578-1] c 74 N82-27121
- CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690
- SPACE SHUTTLES**
- Flight craft Patent  
[NASA-CASE-XAC-02058] c 02 N71-16087
- A method of delivering a vehicle to earth orbit and returning the reusable portion thereof to earth  
[NASA-CASE-MSC-12391] c 30 N73-12884
- Space shuttle vehicle and system  
[NASA-CASE-MSC-12433] c 31 N73-14854
- Variable ratio mixed-mode bilateral master-slave control system for shuttle remote manipulator system  
[NASA-CASE-MSC-14245-1] c 18 N75-27041
- Fused silicone coatings containing discrete particles for protecting niobium alloys — used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229
- Device for coupling a first vehicle to a second vehicle  
[NASA-CASE-GSC-12429-1] c 37 N81-14320
- System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724
- Terminal guidance sensor system — space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519
- Adjustable high emittance gap filler — reentry shielding for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339
- Hemispherical latching apparatus for payload retention  
[NASA-CASE-MFS-25637] c 16 N82-31398
- SPACE SIMULATORS**
- Space simulator Patent  
[NASA-CASE-XNP-00459] c 11 N70-38675
- Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691] c 31 N71-15674
- Space simulation and radiative property testing system and method Patent  
[NASA-CASE-MFS-20096] c 14 N71-30026
- Biocentrifuge system capable of exchanging specimen cages while in operational mode  
[NASA-CASE-MFS-23825-1] c 51 N81-32829
- SPACE STATIONS**
- Manned space station Patent  
[NASA-CASE-XLA-00258] c 31 N70-38676
- Meteoroid impact position locator aid for manned space station  
[NASA-CASE-LAR-10629-1] c 35 N75-33367
- Multiple in-line docking capability for rotating space stations  
[NASA-CASE-MFS-20855-1] c 15 N77-10112
- SPACE STORAGE**
- Hemispherical latching apparatus for payload retention  
[NASA-CASE-MFS-25637] c 16 N82-31398
- SPACE SUITS**
- Universal pilot restraint suit and body support therefor Patent  
[NASA-CASE-XAC-00405] c 05 N70-41819
- Space suit pressure stabilizer Patent  
[NASA-CASE-XLA-05332] c 05 N71-11194
- Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11195
- Biological isolation garment Patent  
[NASA-CASE-MSC-12206-1] c 05 N71-17599
- Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c 11 N71-18773
- Space suit heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439
- G conditioning suit Patent  
[NASA-CASE-XLA-02898] c 05 N71-20268
- Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161
- Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256
- Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MSC-12109] c 18 N71-26285
- Venting device for pressurized space suit helmet Patent  
[NASA-CASE-XMS-09652-1] c 05 N71-26333
- Automatic control of liquid cooling garment by cutaneous and external auditory meatus temperatures  
[NASA-CASE-MSC-13917-1] c 05 N72-15098



Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332] c 05 N72-20097

Space suit having improved waist and torso movement  
[NASA-CASE-ARC-10275-1] c 05 N72-22092

Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332-2] c 05 N73-25125

Temperature controller for a fluid cooled garment  
[NASA-CASE-ARC-10599-1] c 05 N73-26071

Space suit  
[NASA-CASE-MSC-12609-1] c 05 N73-32012

Non-flammable elastomeric fiber from a fluorinated elastomer and containing an halogenated flame retardant  
[NASA-CASE-MSC-14331-1] c 27 N76-24405

Protective garment ventilation system  
[NASA-CASE-XMS-04928] c 54 N78-17679

Emergency space-suit helmet  
[NASA-CASE-MSC-10954-1] c 54 N78-18761

Spacesuit mobility joints  
[NASA-CASE-ARC-11058-1] c 54 N78-31735

Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736

Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721

Spacesuit mobility knee joints  
[NASA-CASE-ARC-11058-2] c 54 N79-24651

Absorbent product to absorb fluids — for collection of human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29362

**SPACE TOOLS**

Pneumatic inflatable end effector  
[NASA-CASE-MFS-23696-1] c 54 N81-26718

**SPACE TRANSPORTATION SYSTEM**

Coupling device for moving vehicles  
[NASA-CASE-GSC-12322-1] c 37 N80-14398

**SPACE VEHICLE CHECKOUT PROGRAM**

Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604

Electronic checkout system for space vehicles Patent  
[NASA-CASE-XKS-08012-2] c 31 N71-15566

High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c 14 N71-17588

**SPACEBORNE TELESCOPES**

Anastigmatic three-mirror telescope  
[NASA-CASE-MFS-23675-1] c 89 N79-10969

Cooled echelle grating spectrometer — for space telescope applications  
[NASA-CASE-NPO-14372-1] c 35 N80-26635

Extended range X-ray telescope  
[NASA-CASE-MFS-25282-1] c 89 N81-34122

**SPACECRAFT**

Interconnection of solar cells Patent  
[NASA-CASE-XGS-01475] c 03 N71-11058

Attitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880

Solar cell and circuit array and process for nullifying magnetic fields Patent  
[NASA-CASE-XGS-03390] c 03 N71-23187

High efficiency ionizer assembly Patent  
[NASA-CASE-XNP-01954] c 28 N71-28850

Altitude simulation chamber for rocket engine testing  
[NASA-CASE-MFS-20620] c 11 N72-27262

**SPACECRAFT ANTENNAS**

Parasitic probe antenna Patent  
[NASA-CASE-XKS-09348] c 09 N71-13521

Millimeter wave antenna system Patent Application  
[NASA-CASE-GSC-10949-1] c 07 N71-28965

Integrated thermoelectric generator/space antenna combination  
[NASA-CASE-XER-09521] c 09 N72-12136

Omnidirectional slot antenna for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c 09 N72-25247

Singly-curved reflector for use in high-gain antennas  
[NASA-CASE-NPO-11361] c 07 N72-32169

Collapsible structure for an antenna reflector  
[NASA-CASE-NPO-11751] c 07 N73-24176

Multi-channel rotating optical interface for data transmission  
[NASA-CASE-NPO-14066-1] c 74 N79-34011

Antenna deployment mechanism for use with a spacecraft — extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183

Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558

**SPACECRAFT CABIN ATMOSPHERES**

Thermal control wall panel Patent  
[NASA-CASE-XLA-01243] c 33 N71-22792

Nonflammable coating compositions — for use in high oxygen environments  
[NASA-CASE-MFS-20486-2] c 27 N74-17283

Regenerable device for scrubbing breathable air of CO<sub>2</sub> and moisture without special heat exchanger equipment  
[NASA-CASE-MSC-14771-1] c 54 N77-32722

**SPACECRAFT COMMUNICATION**

Time division multiplex system  
[NASA-CASE-XGS-05918] c 07 N69-39974

Phase-shift data transmission system having a pseudo-noise SYNC code modulated with the data in a single channel Patent  
[NASA-CASE-XNP-00911] c 08 N70-41961

Tracking receiver Patent  
[NASA-CASE-XGS-08679] c 10 N71-21473

Omnidirectional microwave spacecraft antenna Patent  
[NASA-CASE-XLA-03114] c 09 N71-22888

VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c 07 N71-24614

Rapid sync acquisition system Patent  
[NASA-CASE-NPO-10214] c 10 N71-26577

Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c 32 N74-20864

Switchable beamwidth monopulse method and system  
[NASA-CASE-GSC-11924-1] c 33 N76-27472

Antenna feed system for receiving circular polarization and transmitting linear polarization  
[NASA-CASE-NPO-14362-1] c 32 N80-16261

Common data buffer system — communication with computational equipment utilized in spacecraft operations  
[NASA-CASE-KSC-11048-1] c 62 N81-24779

Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341

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Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c 09 N70-20737

Vibration damping system Patent  
[NASA-CASE-XMS-01620] c 23 N71-15673

Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906

Omnidirectional anisotropic molecular trap Patent  
[NASA-CASE-XGS-00783] c 30 N71-17788

Spacecraft airflow Patent  
[NASA-CASE-XLA-02050] c 31 N71-22968

Docking structure for spacecraft Patent  
[NASA-CASE-XMF-05941] c 31 N71-23912

Redundant actuating mechanism Patent  
[NASA-CASE-XGS-08718] c 15 N71-24600

Space simulator Patent  
[NASA-CASE-NPO-10141] c 11 N71-24964

Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434

Peak acceleration limiter for vibrational tester Patent  
[NASA-CASE-NPO-10556] c 14 N71-27185

Solid state thermal control polymer coating Patent  
[NASA-CASE-XLA-01745] c 33 N71-28903

Scientific experiment flexible mount  
[NASA-CASE-MSC-12372-1] c 31 N72-25842

Airlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136

Thrust-isolating mounting — characteristics of support for loads mounted in spacecraft  
[NASA-CASE-MFS-21680-1] c 18 N74-27397

Variable ratio mixed-mode bilateral master-slave control system for shuttle remote manipulator system  
[NASA-CASE-MSC-14245-1] c 18 N75-27041

High temperature penetrator assembly with bayonet plug and ramp-activated lock  
[NASA-CASE-MSC-18526-1] c 37 N82-24494

**SPACECRAFT CONFIGURATIONS**

Inflatable honeycomb Patent  
[NASA-CASE-XLA-00204] c 32 N70-36536

Space and atmospheric reentry vehicle Patent  
[NASA-CASE-XGS-00260] c 31 N70-37924

Spacecraft separation system for spinning vehicles and/or payloads Patent  
[NASA-CASE-XLA-02132] c 31 N71-10582

Space shuttle vehicle and system  
[NASA-CASE-MSC-12433] c 31 N73-14854

Space vehicle  
[NASA-CASE-MFS-22734-1] c 18 N75-19329

**SPACECRAFT CONSTRUCTION MATERIALS**

Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996

Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747

Method of making a composite sandwich lattice structure  
[NASA-CASE-LAR-11898-2] c 24 N78-17149

**SPACECRAFT CONTROL**

Light sensitive digital aspect sensor Patent  
[NASA-CASE-XGS-00359] c 14 N70-34158

Space vehicle attitude control Patent  
[NASA-CASE-XNP-00465] c 21 N70-35395

Parachute glider Patent  
[NASA-CASE-XLA-00898] c 02 N70-36804

Attitude control for spacecraft Patent  
[NASA-CASE-XNP-00294] c 21 N70-36938

Attitude orientation of spin-stabilized space vehicles Patent  
[NASA-CASE-XLA-00281] c 21 N70-36943

Hypersonic reentry vehicle Patent  
[NASA-CASE-XMS-04142] c 31 N70-41631

Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c 21 N70-41856

Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-03914] c 21 N71-10771

Spacecraft experiment pointing and attitude control system Patent  
[NASA-CASE-XLA-05464] c 21 N71-14132

Attitude control system Patent  
[NASA-CASE-XGS-04393] c 21 N71-14159

Reactance control system Patent  
[NASA-CASE-XNP-01598] c 21 N71-15583

Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c 21 N71-15642

Inertial reference apparatus Patent  
[NASA-CASE-XAC-03107] c 23 N71-16098

Construction and method of arranging a plurality of ion engines to form a cluster Patent  
[NASA-CASE-XNP-02923] c 28 N71-23081

Ion beam deflector Patent  
[NASA-CASE-LEW-10889-1] c 28 N71-26173

Heated porous plug microthruster  
[NASA-CASE-GSC-10640-1] c 28 N72-18766

Flight control system  
[NASA-CASE-MSC-13397-1] c 21 N72-25595

All sky pointing attitude control system  
[NASA-CASE-ARC-10716-1] c 35 N77-20399

**SPACECRAFT DESIGN**

Lunar landing flight research vehicle Patent  
[NASA-CASE-XFR-00929] c 31 N70-34966

Space capsule Patent  
[NASA-CASE-XLA-01332] c 31 N71-15664

Spacecraft radiator cover Patent  
[NASA-CASE-MSC-12049] c 31 N71-16080

Method and apparatus for securing to a spacecraft Patent  
[NASA-CASE-MFS-11133] c 31 N71-16222

Aerodynamic protection for space flight vehicles Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679

Self supporting space vehicle Patent  
[NASA-CASE-XLA-00117] c 31 N71-17680

Multi-mission module Patent  
[NASA-CASE-XMF-01543] c 31 N71-17730

Docking structure for spacecraft Patent  
[NASA-CASE-XMF-05941] c 31 N71-23912

Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434

Emergency earth orbital escape device  
[NASA-CASE-MSC-13281] c 31 N72-18859

Space vehicle  
[NASA-CASE-MFS-22734-1] c 18 N75-19329

Space vehicle system  
[NASA-CASE-MSC-12561-1] c 18 N76-17185

Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c 33 N77-10429

**SPACECRAFT DOCKING**

Expanding center probe and drogue Patent  
[NASA-CASE-XMS-03613] c 31 N71-16346

Docking structure for spacecraft Patent  
[NASA-CASE-XMF-05941] c 31 N71-23912

Latching mechanism Patent  
[NASA-CASE-MSC-15474-1] c 15 N71-26162

Docking structure for spacecraft  
[NASA-CASE-MFS-20863] c 31 N73-26876

Latch mechanism  
[NASA-CASE-MSC-12549-1] c 37 N74-27903

Spacecraft docking and alignment system — using television camera system  
[NASA-CASE-MSC-12559-1] c 18 N76-14186

Multiple in-line docking capability for rotating space stations  
[NASA-CASE-MFS-20855-1] c 15 N77-10112

Combined docking and grasping device  
[NASA-CASE-MFS-23088-1] c 37 N77-23483

Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N81-24164

Terminal guidance sensor system — space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519

Apparatus for releasably connecting first and second objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 15 N82-28318



## SPACECRAFT ELECTRONIC EQUIPMENT

- Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391
- Vacuum deposition apparatus Patent  
[NASA-CASE-XMF-01667] c 15 N71-17647
- Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984

## SPACECRAFT ENVIRONMENTS

- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203
- Quick disconnect latch and handle combination Patent  
[NASA-CASE-MFS-11132] c 15 N71-17649
- Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725
- Dual stage check valve  
[NASA-CASE-MSC-13587-1] c 15 N73-30459
- Metering gun for dispensing precisely measured charges of fluid  
[NASA-CASE-MFS-21163-1] c 54 N74-17853

## SPACECRAFT GUIDANCE

- Ejection unit Patent  
[NASA-CASE-XNP-00676] c 15 N70-38996
- Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688
- Solar vane actuator Patent  
[NASA-CASE-XNP-05535] c 14 N71-23040
- Azimuth laying system Patent  
[NASA-CASE-XMF-01669] c 21 N71-23289
- Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243
- Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376

## SPACECRAFT INSTRUMENTS

- Mechanical coordinate converter Patent  
[NASA-CASE-XNP-00614] c 14 N70-36907
- Air bearing Patent  
[NASA-CASE-XMF-00339] c 15 N70-39896
- Folding boom assembly Patent  
[NASA-CASE-XGS-00938] c 32 N70-41367
- Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996
- Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c 14 N71-15621
- Clamping assembly for inertial components Patent  
[NASA-CASE-XMS-02184] c 15 N71-20813
- Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882
- Combined optical attitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268
- Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118
- Spacecraft attitude control method and apparatus  
[NASA-CASE-HQN-10439] c 21 N72-21624
- Pump for delivering heated fluids  
[NASA-CASE-NPO-11417] c 15 N73-24513
- Deployable pressurized cell structure for a micrometeoroid detector  
[NASA-CASE-LAR-10295-1] c 35 N74-21062
- Distributed-switch Dicke radiometers  
[NASA-CASE-GSC-12219-1] c 35 N80-18359
- Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297

## SPACECRAFT LANDING

- Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c 15 N70-34861
- Foam generator Patent  
[NASA-CASE-XLA-00838] c 03 N70-36778
- Discrete local altitude sensing device Patent  
[NASA-CASE-XMS-03782] c 14 N70-41812

## SPACECRAFT LAUNCHING

- Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694
- Disconnect unit  
[NASA-CASE-NPO-11330] c 33 N73-26958

## SPACECRAFT MODELS

- Apparatus for measuring electric field strength on the surface of a model vehicle Patent  
[NASA-CASE-XLE-02036] c 09 N71-16086

## SPACECRAFT MODULES

- Radial module space station Patent  
[NASA-CASE-XMS-01906] c 31 N70-41373
- Multi-mission module Patent  
[NASA-CASE-XMF-01543] c 31 N71-17730
- Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434
- Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829

## SPACECRAFT MOTION

- Magnetic suspension and pointing system --- on a carrier vehicle  
[NASA-CASE-LAR-11889-1] c 35 N79-26372

## SPACECRAFT POSITION INDICATORS

- Device for determining relative angular position between a spacecraft and a radiation emitting celestial body  
[NASA-CASE-GSC-11444-1] c 14 N73-28490
- Spacecraft attitude sensor  
[NASA-CASE-GSC-10890-1] c 21 N73-30640

## SPACECRAFT POWER SUPPLIES

- Spacecraft battery seals  
[NASA-CASE-XGS-03864] c 15 N69-24320
- Space vehicle electrical system Patent  
[NASA-CASE-XMF-00517] c 03 N70-34157
- Ionospheric battery Patent  
[NASA-CASE-XGS-01593] c 03 N70-35408
- Generator for a space power system Patent  
[NASA-CASE-XLE-04250] c 09 N71-20446
- Monostable multivibrator  
[NASA-CASE-GSC-10082-1] c 10 N72-20221
- Stacked solar cell arrays  
[NASA-CASE-NPO-11771] c 03 N73-20040
- Thermoelectric power system --- for spacecraft  
[NASA-CASE-MFS-22002-1] c 44 N76-16612
- Solar energy power system  
[NASA-CASE-MFS-21628-2] c 44 N76-23675
- Module failure isolation circuit for paralleled inverters --- preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254
- Solar driven liquid metal MHD power generator  
[NASA-CASE-LAR-12495-1] c 44 N81-32609
- Linear magnetic motor/generator --- to generate electric energy using magnetic flux for spacecraft power supply  
[NASA-CASE-GSC-12518-1] c 33 N82-24421

## SPACECRAFT PROPULSION

- Colloid propulsion method and apparatus Patent  
[NASA-CASE-XLE-00817] c 28 N70-33265
- Trajectory-correction propulsion system Patent  
[NASA-CASE-XNP-01104] c 28 N70-39931
- Ion engine casing construction and method of making same Patent  
[NASA-CASE-XNP-06942] c 28 N71-23293
- Voice operated controller Patent  
[NASA-CASE-XLA-04063] c 31 N71-33160
- Solid propellant motor  
[NASA-CASE-NPO-11458A] c 20 N78-32179
- General purpose rocket furnace  
[NASA-CASE-MFS-23460-1] c 12 N79-26075
- Speed control device for a heavy duty shaft --- solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15364

## SPACECRAFT RADIATORS

- Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523

## SPACECRAFT RECOVERY

- Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-36410
- Wing deployment method and apparatus Patent  
[NASA-CASE-XMS-00907] c 02 N70-41630
- Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N81-24164

## SPACECRAFT REENTRY

- Space capsule Patent  
[NASA-CASE-XLA-00149] c 31 N70-37938
- Event recorder Patent  
[NASA-CASE-XLA-01832] c 14 N71-21006

## SPACECRAFT SHIELDING

- Aerodynamic protection for space flight vehicles Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679
- Isothermal cover with thermal reservoirs Patent  
[NASA-CASE-MFS-20355] c 33 N71-25353
- Stabilized zinc oxide coating compositions Patent  
[NASA-CASE-XMF-07770-2] c 18 N71-26772
- Electrically conductive thermal control coatings  
[NASA-CASE-GSC-12207-1] c 24 N79-14156
- Thermal insulation protection means  
[NASA-CASE-MSC-12737-1] c 24 N79-25142
- Thermal barrier pressure seal --- shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSC-18134-1] c 37 N81-15363

## SPACECRAFT STABILITY

- Reaction wheel scanner Patent  
[NASA-CASE-XGS-02629] c 14 N71-21082
- Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089
- Angular momentum control device used for stabilization of space vehicles and the like  
[NASA-CASE-LAR-11051-1] c 15 N78-14158
- Tetherline system for orbiting satellites  
[NASA-CASE-MFS-23564-1] c 15 N78-25119
- Active nutation controller  
[NASA-CASE-GSC-12273-1] c 35 N80-21719
- Method of and apparatus for damping nutation motion with minimum spin axis attitude disturbance  
[NASA-CASE-GSC-12551-1] c 18 N81-12156

## SPACECRAFT STRUCTURES

- Collapsible loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c 07 N70-40202
- Electro-optical alignment control system Patent  
[NASA-CASE-XMF-00908] c 14 N70-40238
- Spacecraft radiator cover Patent  
[NASA-CASE-MSC-12049] c 31 N71-16080
- Satellite appendage tie down cord Patent  
[NASA-CASE-XGS-02554] c 31 N71-21064
- Thermal control panel Patent  
[NASA-CASE-XLA-07728] c 33 N71-22890
- Inflatable tether Patent  
[NASA-CASE-XMS-10993] c 15 N71-28936
- Delayed simultaneous release mechanism  
[NASA-CASE-GSC-10814-1] c 03 N73-20039
- Pressurized panel  
[NASA-CASE-XLA-08916-2] c 14 N73-28487
- Structural heat pipe --- for spacecraft wall thermal insulation system  
[NASA-CASE-GSC-11619-1] c 34 N75-12222
- Auger attachment method for insulation --- of spacecraft  
[NASA-CASE-MSC-12615-1] c 37 N76-19437
- Particulate and solar radiation stable coating for spacecraft  
[NASA-CASE-LAR-10805-2] c 34 N77-18382
- Diced tile thermal protection for spacecraft  
[NASA-CASE-MSC-16366-1] c 24 N79-23142
- Pneumatic inflatable end effector  
[NASA-CASE-MFS-23696-1] c 54 N81-26718

## SPACECRAFT TELEVISION

- Electrically-operated rotary shutter Patent  
[NASA-CASE-XNP-00637] c 14 N70-40273
- Television signal scan rate conversion system Patent  
[NASA-CASE-XMS-07168] c 07 N71-11300
- Optical conversion method --- for spacecraft television  
[NASA-CASE-MSC-12618-1] c 74 N78-17865

## SPACECRAFT TRACKING

- Ranging system Patent  
[NASA-CASE-NPO-10066] c 09 N71-18598
- Deep space monitor communication satellite system Patent  
[NASA-CASE-XAC-06029-1] c 31 N71-24813
- Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c 14 N71-26627
- Orbital and entry tracking accessory for globes --- to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015
- Conical scan tracking system employing a large antenna  
[NASA-CASE-NPO-14009-1] c 32 N79-13214

## SPACECREWS

- Orbital escape device Patent  
[NASA-CASE-XMS-06162] c 31 N71-28851

## SPACELAB PAYLOADS

- Hemispherical latching apparatus for payload retention  
[NASA-CASE-MFS-25837] c 16 N82-31398

## SPALLATION

- Method of producing I-123 --- by bombardment of cesium causing spallation  
[NASA-CASE-LEW-11390-2] c 25 N76-27383

## SPARK CHAMBERS

- Laser measuring system for incremental assemblies --- measuring wire-wrapped frame assemblies in spark chambers  
[NASA-CASE-GSC-12321-1] c 36 N82-16396
- Inorganic spark chamber frame and method of making the same  
[NASA-CASE-GSC-12354-1] c 35 N82-24471

## SPARK GAPS

- Protective circuit of the spark gap type  
[NASA-CASE-XAC-08981] c 09 N69-39897
- Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976

## SPARK IGNITION

- High temperature spark plug Patent  
[NASA-CASE-XLE-00660] c 28 N70-39925
- Plasma igniter for internal combustion engine  
[NASA-CASE-NPO-13828-1] c 37 N79-11405

## SPARK PLUGS

- High temperature spark plug Patent  
[NASA-CASE-XLE-00660] c 28 N70-39925

## SPATIAL DISTRIBUTION

- Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339
- Spatial energy distribution --- scanning a tunable diode laser beam automatically  
[NASA-CASE-LAR-12631-1] c 35 N82-18557

## SPATIAL FILTERING

- Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c 36 N77-32478



## SPECIMENS

Fixture for environmental exposure of structural materials under compression  
[NASA-CASE-LAR-12602-1] c 35 N81-19429

## SPECTRAL REFLECTANCE

Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040

## SPECTRAL SIGNATURES

Multispectral imaging and analysis system — using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288

## SPECTROMETERS

Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04161] c 14 N71-15599

Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266

Maksutov spectrograph Patent  
[NASA-CASE-XLA-10402] c 14 N71-29041

Dual purpose optical instrument capable of simultaneously acting as spectrometer and diffractometer  
[NASA-CASE-XNP-05231] c 14 N73-28491

Compton scatter attenuation gamma ray spectrometer  
[NASA-CASE-MFS-21441-1] c 14 N73-30392

Mossbauer spectrometer radiation detector  
[NASA-CASE-LAR-11155-1] c 35 N74-15091

Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040

Spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c 35 N75-19613

Resonant waveguide stark cell — using microwave spectrometers  
[NASA-CASE-LAR-11352-1] c 33 N75-26245

Ion and electron detector for use in an ICR spectrometer  
[NASA-CASE-NPO-13479-1] c 35 N77-10492

Frequency-scanning particle size spectrometer  
[NASA-CASE-NPO-13606-2] c 35 N80-18364

Velocity servo for continuous scan Fourier interference spectrometer  
[NASA-CASE-NPO-14093-1] c 35 N80-20563

Visible and infrared polarization ratio spectrophotometer  
[NASA-CASE-LAR-12285-1] c 35 N80-28687

Correlation spectrometer having high resolution and multiplexing capability  
[NASA-CASE-NPO-15558-1] c 35 N82-26636

## SPECTROPHOTOMETERS

Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c 14 N70-41676

High resolution Fourier interferometer-spectrophotometer  
[NASA-CASE-NPO-13604-1] c 35 N76-31490

Differential optoacoustic absorption detector  
[NASA-CASE-NPO-13759-1] c 74 N78-17867

## SPECTRORADIOMETERS

Compact spectroradiometer  
[NASA-CASE-HQN-10683] c 14 N71-34389

## SPECTROSCOPIC ANALYSIS

Spectroscope equipment using a slender cylindrical reflector as a substitute for a slit Patent  
[NASA-CASE-XGS-08269] c 23 N71-26206

## SPECTRUM ANALYSIS

Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04161] c 14 N71-15599

Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871

Method and apparatus for high resolution spectral analysis  
[NASA-CASE-NPO-10748] c 08 N72-20177

Frequency tracked pulse technique for ultrasonic analysis  
[NASA-CASE-LAR-12697-1] c 32 N80-26571

Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015

## SPECTRAL REFLECTION

Real time reflectometer — measurement of specular reflectance  
[NASA-CASE-MFS-23118-1] c 35 N77-31465

## SPEECH RECOGNITION

Speech analyzer  
[NASA-CASE-GSC-11898-1] c 32 N77-30309

## SPEED CONTROL

System for maintaining a motor at a predetermined speed utilizing digital feedback means Patent  
[NASA-CASE-XMF-06892] c 09 N71-24805

Optimal control system for an electric motor driven vehicle  
[NASA-CASE-NPO-11210] c 11 N72-20244

Two speed drive system — mechanical device for changing speed on rotating vehicle wheel  
[NASA-CASE-MFS-20645-1] c 37 N74-23070

Low speed phaselock speed control system — for brushless dc motor  
[NASA-CASE-GSC-11127-1] c 09 N75-24758

Speed control device for a heavy duty shaft — solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15364

Variable speed drive  
[NASA-CASE-GSC-12643-1] c 37 N81-24447

## SPEED REGULATORS

A dc motor speed control system Patent  
[NASA-CASE-MFS-14610] c 09 N71-28886

## SPHERES

Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c 14 N71-15621

Radar calibration sphere  
[NASA-CASE-XLA-11154] c 07 N72-21117

Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

Sphere forming method and apparatus  
[NASA-CASE-NPO-15070-1] c 31 N82-33567

## SPHERICAL SHELLS

Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c 09 N69-21542

Spherical measurement device  
[NASA-CASE-XLA-06683] c 14 N72-28436

## SPHERICAL TANKS

Spherical tank gauge Patent  
[NASA-CASE-XMS-06236] c 14 N71-21007

## SPHERICAL WAVES

Shock wave convergence apparatus  
[NASA-CASE-MFS-20890] c 14 N72-22439

## SPHYGMOGRAPHY

Logic-controlled occlusive cuff system  
[NASA-CASE-MSC-14836-1] c 52 N82-11770

## SPIKE NOZZLES

Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c 31 N71-15647

## SPIKE POTENTIALS

Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393

## SPIN DYNAMICS

Nutation damper  
[NASA-CASE-GSC-11205-1] c 15 N73-25513

Stabilization of He2(a 3 Sigma u+) molecules in liquid helium by optical pumping for vacuum UV laser  
[NASA-CASE-NPO-13993-1] c 72 N79-13826

## SPIN REDUCTION

Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485

Despin weight release Patent  
[NASA-CASE-XLA-00679] c 15 N70-38601

Stretch de-spin mechanism Patent  
[NASA-CASE-XGS-00619] c 30 N70-40016

Spacecraft separation system for spinning vehicles and/or payloads Patent  
[NASA-CASE-XLA-02132] c 31 N71-10582

Method and means for damping nutation in a satellite  
[NASA-CASE-XMF-00442] c 31 N71-10747

## SPIN STABILIZATION

Dynamic precession damper for spin stabilized vehicles Patent  
[NASA-CASE-XLA-01989] c 21 N70-34295

Attitude orientation of spin-stabilized space vehicles Patent  
[NASA-CASE-XLA-00281] c 21 N70-36943

Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c 21 N71-15642

Cartwheel satellite synchronization system Patent  
[NASA-CASE-XGS-05579] c 31 N71-15676

Velocity package Patent  
[NASA-CASE-XLA-01339] c 31 N71-15692

Passive dual spin misalignment compensators — gyro-stabilized device  
[NASA-CASE-GSC-11479-1] c 35 N74-28097

Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c 08 N74-30421

Active nutation controller  
[NASA-CASE-GSC-12273-1] c 35 N80-21719

Thrust augmented spin recovery device  
[NASA-CASE-LAR-11970-2] c 08 N81-19130

Scanner — photography from a spin stabilized synchronous satellite  
[NASA-CASE-GSC-12032-2] c 43 N82-13465

## SPINDLES

Variable contour securing system  
[NASA-CASE-MSC-16270-1] c 37 N78-27423

## SPINE

Spine immobilization apparatus  
[NASA-CASE-ARC-11167-1] c 52 N81-25662

## SPINNERS

Head for high speed spinner having a vacuum chuck — holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482

## SPIRAL ANTENNAS

Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558

## SPIRAL WRAPPING

Adjustable tension wire guide Patent  
[NASA-CASE-XMS-02383] c 15 N71-15918

Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N81-12422

Continuous self-locking spiral wound seal — for maintaining pressure between chambers in cryogenic wind tunnels  
[NASA-CASE-LAR-12315-1] c 37 N82-24490

## SPIRALS (CONCENTRATORS)

Spiral groove seal — for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c 37 N74-10474

## SPIROMETERS

Balanced bellows spirometer  
[NASA-CASE-XAR-01547] c 05 N69-21473

## SPLINTS

Stretcher Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159

## SPOILERS

Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205

## SPORES

Lyophilized spore dispenser  
[NASA-CASE-LAR-10544-1] c 37 N74-13178

## SPOT WELDS

Electric arc welding Patent  
[NASA-CASE-XMF-00392] c 15 N70-34814

Automatic closed circuit television arc guidance control Patent  
[NASA-CASE-MFS-13046] c 07 N71-19433

## SPRAY NOZZLES

Rocket injector head  
[NASA-CASE-XMF-04592-1] c 20 N79-21125

Fire extinguishing apparatus having a slidable mass for a penetrator nozzle — for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137

Controlled overspray spray nozzle  
[NASA-CASE-MFS-25139-1] c 34 N82-13376

## SPRAYED COATINGS

Method of making a diffusion bonded refractory coating Patent  
[NASA-CASE-XLE-01604-2] c 15 N71-15610

Thermal protection ablation spray system Patent  
[NASA-CASE-XLA-04251] c 18 N71-26100

Peen plating  
[NASA-CASE-GSC-11163-1] c 15 N73-32360

Sprayable low density ablator and application process  
[NASA-CASE-MFS-23506-1] c 24 N78-24290

Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-13359-1] c 27 N81-24265

Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492

High temperature emittance coatings and coating compositions — repairing damaged space shuttle tiles in space  
[NASA-CASE-MSC-18851-1] c 27 N82-26460

Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N82-28640

## SPRAYERS

External liquid-spray cooling of turbine blades Patent  
[NASA-CASE-XLE-00037] c 28 N70-33372

Method and apparatus for attaching physiological monitoring electrodes Patent  
[NASA-CASE-XFR-07658-1] c 05 N71-26293

Liquid spray cooling method Patent  
[NASA-CASE-XLE-00027] c 33 N71-29152

Closed loop spray cooling apparatus — for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c 31 N78-17237

Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492

Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N82-28640

## SPRAYING

Aircraft wheel spray drag alleviator Patent  
[NASA-CASE-XLA-01583] c 02 N70-36825

Closed loop spray cooling apparatus  
[NASA-CASE-LEW-11981-2] c 34 N79-20336



## SPREADING

Tool attachment for spreading loose elements away from work Patent  
[NASA-CASE-XMF-02107] c 15 N71-10809

## SPRINGS (ELASTIC)

Belleville spring assembly with elastic guides  
[NASA-CASE-XNP-09452] c 15 N69-27504  
Multiple Belleville spring assembly Patent  
[NASA-CASE-XNP-00840] c 15 N70-38225  
Switching mechanism with energy storage means Patent  
[NASA-CASE-XGS-00473] c 03 N70-38713  
Load cell protection device Patent  
[NASA-CASE-XMS-06782] c 32 N71-15974  
Vibration isolation system using compression springs  
[NASA-CASE-NPO-11012] c 15 N72-11391  
Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c 35 N77-18417  
Natural turbulence electrical power generator — using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834  
Unidirectional flexural pivot  
[NASA-CASE-GSC-12622-1] c 37 N81-22359  
Unitary seal ring assembly — cryogenic applications  
[NASA-CASE-MFS-25678-1] c 37 N82-25517

## SPUTTERING

A method for the deposition of beta-silicon carbide by isoeptaxy  
[NASA-CASE-ERC-10120] c 26 N69-33482  
Method of forming transparent films of ZnO  
[NASA-CASE-FRC-10019] c 15 N73-12487  
Method and apparatus for sputtering utilizing an apertured electrode and a pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c 17 N73-24569  
Sputtering holes with ion beamlets  
[NASA-CASE-LEW-11646-1] c 20 N74-31269  
Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c 37 N75-19684  
Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455  
Ion beam textured graphite electrode plates — high efficiency electron tube devices  
[NASA-CASE-LEW-12919-2] c 24 N82-26386  
Refractory coatings and method of producing the same  
[NASA-CASE-LEW-13169-1] c 26 N82-29415

## SQUARE WAVES

High speed phase detector Patent  
[NASA-CASE-XNP-01306-2] c 09 N71-24596

## SQUARES (MATHEMATICS)

Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437

## SQUIBS

Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922

## STABILITY AUGMENTATION

Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106

## STABILITY TESTS

Method and apparatus for checking the stability of a setup for making reflection type holograms  
[NASA-CASE-MFS-21455-1] c 35 N74-15146

## STABILIZATION

Ultrastable calibrated light source  
[NASA-CASE-MSC-12293-1] c 14 N72-27411  
System for stabilizing torque between a balloon and gondola  
[NASA-CASE-GSC-11077-1] c 02 N73-13008  
Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004  
Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c 76 N75-25730  
Arc control in compact arc lamps  
[NASA-CASE-NPO-10870-1] c 33 N77-22386  
Self-stabilizing radial face seal  
[NASA-CASE-LEW-12991-1] c 37 N81-24442

## STABILIZED PLATFORMS

Hydraulic drive mechanism Patent  
[NASA-CASE-XMS-03252] c 15 N71-10658  
Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175  
Rotary leveling base platform  
[NASA-CASE-ARC-10981-1] c 37 N78-27425  
Magnetic bearing and motor  
[NASA-CASE-GSC-12725-1] c 37 N82-29603

## STABILIZERS

Satellite despin device Patent  
[NASA-CASE-XMF-08523] c 31 N71-20396

## STABILIZERS (AGENTS)

Hydrazinium nitroformate propellant stabilized with nitroguanidine  
[NASA-CASE-NPO-12000] c 27 N72-25699

## STABILIZERS (FLUID DYNAMICS)

Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-36410  
Mechanical stability augmentation system Patent  
[NASA-CASE-XLA-06339] c 02 N71-13422  
Apparatus for automatically stabilizing the attitude of a nonguided vehicle  
[NASA-CASE-ARC-10134] c 30 N72-17873  
Life raft stabilizer  
[NASA-CASE-MSC-12393-1] c 02 N73-26006  
Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MFS-19194-1] c 37 N76-14460

## STABLE OSCILLATIONS

Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986

## STACKS

Remote fire stack igniter — with solenoid-controlled valve  
[NASA-CASE-MFS-21675-1] c 25 N74-33378

## STAGE SEPARATION

Tubular coupling having frangible connecting means  
[NASA-CASE-XLA-02854] c 15 N69-27490  
Missile stage separation indicator and stage initiator Patent  
[NASA-CASE-XLA-00791] c 03 N70-39930  
Quick release separation mechanism Patent  
[NASA-CASE-XLA-01441] c 15 N70-41679  
Spacecraft separation system for spinning vehicles and/or payloads Patent  
[NASA-CASE-XLA-02132] c 31 N71-10582  
Payload/burned-out motor case separation system Patent  
[NASA-CASE-XLA-05369] c 31 N71-15687  
Single action separation mechanism Patent  
[NASA-CASE-XLA-00188] c 15 N71-22874  
Lateral displacement system for separated rocket stages Patent  
[NASA-CASE-XLA-04804] c 31 N71-23008  
Separation simulator Patent  
[NASA-CASE-XKS-04631] c 10 N71-23663  
Frangible link  
[NASA-CASE-MSC-11849-1] c 15 N72-22488

## STAGNATION PRESSURE

Traversing probe Patent  
[NASA-CASE-XFR-02007] c 12 N71-24692  
Stagnation pressure probe — for measuring pressure of supersonic gas streams  
[NASA-CASE-LAR-11139-1] c 35 N74-32878

## STAGNATION TEMPERATURE

Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c 14 N70-34156

## STAINING

Automated single-slide staining device  
[NASA-CASE-LAR-11649-1] c 51 N77-27677

## STAINLESS STEELS

Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443  
Ultrasonic scanning system for in-place inspection of brazed tube joints  
[NASA-CASE-MFS-20767-1] c 38 N74-15130  
Method of forming a wick for a heat pipe  
[NASA-CASE-NPO-13391-1] c 34 N76-27515  
Method of making reinforced composite structure  
[NASA-CASE-LEW-12619-1] c 24 N77-19171  
Method of forming dynamic membrane on stainless steel support  
[NASA-CASE-MSC-18172-1] c 26 N80-19237  
Moving body velocity arresting line — stainless steel cables with energy absorbing sleeves  
[NASA-CASE-LAR-12372-1] c 37 N82-18601

## STAMPING

Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12619-1] c 37 N81-16470

## STANDARDS

Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348

## STANDING WAVES

Method and apparatus for shaping and enhancing acoustical levitation forces  
[NASA-CASE-MFS-25050-1] c 71 N81-15767  
Systems for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N82-11861  
Image readout device with electronically variable spatial resolution  
[NASA-CASE-LAR-12633-1] c 33 N82-24416  
Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 35 N82-24475  
Acoustic levitation methods and apparatus  
[NASA-CASE-NPO-15562-1] c 71 N82-27086  
Acoustic particle separation  
[NASA-CASE-NPO-15559-1] c 71 N82-29112

## STAR TRACKERS

Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c 21 N70-41856  
Sun tracker with rotatable plane-parallel plate and two photocells Patent  
[NASA-CASE-XGS-01159] c 21 N71-10678  
Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-03914] c 21 N71-10771  
Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c 21 N71-15642  
Reference voltage switching unit  
[NASA-CASE-NPO-11253] c 09 N72-17157  
Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c 21 N73-19630  
Star tracking reticles  
[NASA-CASE-GSC-11188-1] c 14 N73-32320  
Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c 74 N74-20008  
Star scanner — with a reticle with a pair of slits having differing separation  
[NASA-CASE-GSC-11569-1] c 89 N74-30886  
Programmable scan/read circuitry for charge coupled device imaging detectors — for a startracker  
[NASA-CASE-NPO-15345-1] c 33 N81-27403

## STARK EFFECT

Resonant waveguide stark cell — using microwave spectrometers  
[NASA-CASE-LAR-11352-1] c 33 N75-26245  
Stark-effect modulation of CO<sub>2</sub> laser with NH<sub>2</sub>D  
[NASA-CASE-NPO-11945-1] c 36 N76-18427  
Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015  
Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159

## STARTERS

Starting circuit for vapor lamps and the like Patent  
[NASA-CASE-XNP-01058] c 09 N71-12540  
Motor run-up system — power lines  
[NASA-CASE-NPO-13374-1] c 33 N75-19524  
Motor power factor controller with a reduced voltage starter  
[NASA-CASE-MFS-25586-1] c 33 N82-11360

## STARTING

Portable device for use in starting air-start-units for aircraft and having cable lead testing capability  
[NASA-CASE-FRC-10113-1] c 33 N80-26599

## STATIC DISCHARGERS

Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401

## STATIC FRICTION

Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c 14 N71-22995  
Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c 35 N76-31489

## STATIC INVERTERS

Static inverters which sum a plurality of waves Patent  
[NASA-CASE-XMF-00663] c 08 N71-18752  
Static inverter Patent  
[NASA-CASE-XGS-05289] c 09 N71-19470

## STATIC LOADS

Instrument for measuring torsional creep and recovery Patent  
[NASA-CASE-XLE-01481] c 14 N71-10781  
Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878

## STATIC PRESSURE

Aerodynamic measuring device Patent  
[NASA-CASE-XLA-00481] c 14 N70-36824  
Check valve assembly for a probe Patent  
[NASA-CASE-XLA-00128] c 15 N70-37925  
Static pressure probe  
[NASA-CASE-LAR-11552-1] c 35 N76-14429  
Static pressure orifice system testing method and apparatus  
[NASA-CASE-LAR-12269-1] c 35 N80-18358

## STATIONKEEPING

Station keeping of a gravity gradient stabilized satellite Patent  
[NASA-CASE-XLA-03132] c 31 N71-22969

## STATISTICAL CORRELATION

Optical probing of supersonic flows with statistical correlation  
[NASA-CASE-MFS-20642] c 14 N72-21407

## STATOR BLADES

Stator rotor tools  
[NASA-CASE-MSC-16000-1] c 37 N78-24544

## STATORS

Nickel base alloy — for gas turbine engine stator vanes  
[NASA-CASE-LEW-12270-1] c 26 N77-32280



Natural turbulence electrical power generator — using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834

**STEADY STATE**  
Steady state thermal radiometers  
[NASA-CASE-MFS-21108-1] c 34 N74-27861

**STEAM TURBINES**  
Boiler for generating high quality vapor Patent  
[NASA-CASE-XLE-00785] c 33 N71-16104

**STEELS**  
Potassium silicate zinc coatings  
[NASA-CASE-GSC-10361-1] c 18 N72-23581

**STEERABLE ANTENNAS**  
Array phasing device Patent  
[NASA-CASE-ERC-10046] c 10 N71-18722  
Satellite communication system Patent  
[NASA-CASE-XNP-02389] c 07 N71-28900  
Amplitude steered array  
[NASA-CASE-GSC-11446-1] c 33 N74-20860  
Phased array antenna control  
[NASA-CASE-MS-14939-1] c 32 N79-11264

**STEERING**  
Steerable solid propellant rocket motor Patent  
[NASA-CASE-XNP-00234] c 28 N70-38645

**STELLAR LUMINOSITY**  
Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c 14 N71-23797

**STELLAR SPECTRA**  
Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c 14 N71-23797

**STENCIL PROCESSES**  
Method for making patterns for resin matrix composites  
[NASA-CASE-ARC-11246-1] c 24 N80-22410

**STEPPING MOTORS**  
Scanner — photography from a spin stabilized synchronous satellite  
[NASA-CASE-GSC-12032-2] c 43 N82-13465

**STEREOPHOTOGRAPHY**  
Stereo photomicrography system  
[NASA-CASE-LAR-10176-1] c 14 N72-20380

**STEREOSCOPIC VISION**  
Stereoscopic television system and apparatus  
[NASA-CASE-ARC-10160-1] c 23 N72-27728

**STERILIZATION**  
Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c 27 N70-41897  
Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c 14 N71-20461  
Air conditioned suit  
[NASA-CASE-LAR-10076-1] c 05 N73-20137  
Protein sterilization method of firefly luciferase using reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c 06 N73-27086  
Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c 54 N75-27761  
Portable heatable container  
[NASA-CASE-NPO-14237-1] c 44 N80-20808  
System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724

**STERILIZATION EFFECTS**  
Electrical connector  
[NASA-CASE-NPO-10694] c 09 N72-20200

**STIFFNESS**  
Modified face seal for positive film stiffness  
[NASA-CASE-LEW-12989-1] c 37 N82-12442

**STIMULATED EMISSION**  
Repetitively pulsed, wavelength selective laser Patent  
[NASA-CASE-ERC-10178] c 16 N71-24832

**STIRLING CYCLE**  
Stirling cycle engine and refrigeration systems  
[NASA-CASE-NPO-13613-1] c 37 N76-29590  
Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318  
Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432  
Solar energy receiver for a Stirling engine  
[NASA-CASE-NPO-14619-1] c 44 N81-17518  
Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370  
Stirling cycle cryogenic cooler — magnetically suspended pistons  
[NASA-CASE-GSC-12697-1] c 31 N82-11312

**STIRRING**  
Stirring apparatus for plural test tubes Patent  
[NASA-CASE-XAC-06956] c 15 N71-21177

**STORAGE**  
Fluid sample collector Patent  
[NASA-CASE-XMS-06767-1] c 14 N71-20435  
Sodium storage and injection system  
[NASA-CASE-NPO-14384-1] c 37 N80-10494

**STORAGE BATTERIES**

Bonded elastomeric seal for electrochemical cells Patent  
[NASA-CASE-XGS-02631] c 03 N71-23006  
Automatic battery charger Patent  
[NASA-CASE-XNP-04758] c 03 N71-24605  
Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c 03 N71-29129  
Electric storage battery  
[NASA-CASE-NPO-11021] c 03 N72-20032  
Hydrogen-bromine secondary battery  
[NASA-CASE-NPO-13237-1] c 44 N76-18641  
Rechargeable battery which combats shape change of the zinc anode  
[NASA-CASE-HQN-10862-1] c 44 N76-29699  
Electrically rechargeable REDOX flow cell  
[NASA-CASE-LEW-12220-1] c 44 N77-14581  
Formulated plastic separators for soluble electrode cells — rubber-on transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313  
Toroidal cell and battery — storage battery for high amp-hour load applications  
[NASA-CASE-LEW-12918-1] c 44 N81-24521

**STORAGE STABILITY**

Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-26155  
Gas diffusion liquid storage bag and method of use for storing blood  
[NASA-CASE-NPO-13830-1] c 52 N79-14749  
Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432

**STORAGE TANKS**

Expulsion bladder-equipped storage tank structure Patent  
[NASA-CASE-XNP-00612] c 11 N70-38182  
Method for leakage testing of tanks Patent  
[NASA-CASE-XMF-02392] c 32 N71-24285  
Zero gravity shadow shield aligner  
[NASA-CASE-KSC-10622-1] c 31 N72-21893  
Cryogenic container compound suspension strap  
[NASA-CASE-ARC-11157-1] c 37 N80-18393

**STOWAGE (ONBOARD EQUIPMENT)**

Hemispherical latching apparatus for payload retention  
[NASA-CASE-MFS-25837] c 16 N82-31398

**STRAIN GAGE ACCELEROMETERS**

Accelerometer with FM output Patent  
[NASA-CASE-XLA-00492] c 14 N70-34799  
Angular accelerometer Patent  
[NASA-CASE-XMS-05936] c 14 N70-41682

**STRAIN GAGE BALANCES**

Self-balancing strain gage transducer Patent  
[NASA-CASE-MFS-12827] c 14 N71-17656

**STRAIN GAGES**

Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980] c 09 N69-27422  
Wire grid forming apparatus Patent  
[NASA-CASE-XLE-00023] c 15 N70-33330  
Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c 14 N70-34705  
Strain gage Patent Application  
[NASA-CASE-FRC-10053] c 14 N70-35587  
Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537  
Strain sensor for high temperatures Patent  
[NASA-CASE-XNP-09205] c 14 N71-17657  
Extensometer Patent  
[NASA-CASE-XMF-04680] c 15 N71-19489  
Strain gage measuring techniques Patent  
[NASA-CASE-XGS-04478] c 14 N71-24233  
Method of temperature compensating semiconductor strain gages Patent  
[NASA-CASE-XLA-04555-1] c 14 N71-25892  
Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200  
Method of making semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980-2] c 14 N72-28438  
Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c 35 N74-26945  
Strain gauge ambiguity sensor for segmented mirror active optical system  
[NASA-CASE-MFS-20506-1] c 35 N75-12273  
Subminiature insertable force transducer — including a strain gage to measure forces in muscles  
[NASA-CASE-NPO-13423-1] c 33 N75-31329  
Self-supporting strain transducer  
[NASA-CASE-LAR-11263-1] c 35 N75-33369  
Strain gage mounting assembly  
[NASA-CASE-NPO-13170-1] c 35 N76-14430  
High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523  
Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648-1] c 35 N77-14407

CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512  
Attaching of strain gages to substrates  
[NASA-CASE-FRC-10093-1] c 35 N80-20560  
Pulsed phase locked loop strain monitor  
[NASA-CASE-LAR-12772-1] c 33 N81-15195  
Photomechanical transducer  
[NASA-CASE-NPO-14363-1] c 39 N81-25400  
Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N82-24473  
Thin film strain transducer — for strain monitoring of high altitude balloons  
[NASA-CASE-WLP-10055-1] c 35 N82-26632  
Strain gage calibration  
[NASA-CASE-LAR-12743-1] c 35 N82-32661

**STRAIN RATE**  
Light intensity strain analysis  
[NASA-CASE-LAR-10765-1] c 32 N73-20740  
Strain gage calibration  
[NASA-CASE-LAR-12743-1] c 35 N82-32661

**STRAKES**  
Hinged strake aircraft control system  
[NASA-CASE-LAR-12860-1] c 05 N82-26278

**STRAPDOWN INERTIAL GUIDANCE**  
All sky pointing attitude control system  
[NASA-CASE-ARC-10716-1] c 35 N77-20399

**STRAPS**  
Meter for use in detecting tension in straps having predetermined elastic characteristics  
[NASA-CASE-MFS-22189-1] c 35 N75-19615  
Cryogenic container compound suspension strap  
[NASA-CASE-ARC-11157-1] c 37 N80-18393

**STRATIFICATION**  
A stable density-stratification solar pond  
[NASA-CASE-NPO-15419-1] c 44 N81-27599

**STRATIGRAPHY**  
System for plotting subsoil structure and method therefor  
[NASA-CASE-NPO-14191-1] c 31 N80-32584

**STREAMS**  
Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c 35 N78-19465

**STRESS ANALYSIS**  
Method and apparatus for measuring the damping characteristics of a structure  
[NASA-CASE-ARC-10154-1] c 14 N72-22440  
Light intensity strain analysis  
[NASA-CASE-LAR-10765-1] c 32 N73-20740  
High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523

**STRESS CONCENTRATION**  
Self-supporting strain transducer  
[NASA-CASE-LAR-11263-1] c 35 N75-33369

**STRESS CORROSION**  
Method of inhibiting stress corrosion cracks in titanium alloys Patent  
[NASA-CASE-NPO-10271] c 17 N71-16393  
Controlled glass bead peening Patent  
[NASA-CASE-XLA-07390] c 15 N71-18616

**STRESS MEASUREMENT**  
Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980] c 09 N69-27422  
Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c 14 N70-34705  
Self-balancing strain gage transducer Patent  
[NASA-CASE-MFS-12827] c 14 N71-17656  
Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c 32 N71-25360  
Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c 35 N77-22449  
CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512

**STRESS RELAXATION**  
Method for alleviating thermal stress damage in laminates — metal matrix composites  
[NASA-CASE-LEW-12493-1] c 24 N81-17170

**STRESS RELIEVING**  
All-directional fastener Patent  
[NASA-CASE-XLA-01807] c 15 N71-10799

**STRESSES**  
Tape recorder Patent  
[NASA-CASE-XGS-08259] c 14 N71-23698  
Strain gauge measuring techniques Patent  
[NASA-CASE-XGS-04478] c 14 N71-24233  
Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MS-14182-1] c 27 N76-14264  
Fixture for environmental exposure of structural materials under compression  
[NASA-CASE-LAR-12602-1] c 35 N81-19429

**STRETCHERS**  
Rescue litter flotation assembly Patent  
[NASA-CASE-XMS-04170] c 05 N71-22748  
Stretcher Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159



## STRETCHING

Fastener stretcher  
[NASA-CASE-GSC-11149-1] c 15 N73-30457

## STRINGERS

Universal connectors for joining stringers  
[NASA-CASE-LAR-12744-1] c 37 N81-31551

## STRINGS

Omnidirectional joint Patent  
[NASA-CASE-XMS-09635] c 05 N71-24623

## STRIP TRANSMISSION LINES

Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348  
Microwave switching power divider — antenna feeds  
[NASA-CASE-GSC-12420-1] c 33 N82-16340

## STRUCTURAL ANALYSIS

Window defect planar mapping technique  
[NASA-CASE-MSC-19442-1] c 74 N77-10899

## STRUCTURAL DESIGN

Life raft Patent  
[NASA-CASE-XMS-00863] c 05 N70-34857  
High pressure regulator valve Patent  
[NASA-CASE-XNP-00710] c 15 N71-10778  
Lifting body Patent Application  
[NASA-CASE-FRC-10063] c 01 N71-12217  
Ring wing tension vehicle Patent  
[NASA-CASE-XLA-04901] c 31 N71-24315  
Opto-mechanical subsystem with temperature compensation through isothermal design  
[NASA-CASE-GSC-12059-1] c 35 N77-27366  
Lightweight reflector assembly  
[NASA-CASE-NPO-13707-1] c 74 N77-28933  
Horizontally mounted solar collector  
[NASA-CASE-MFS-23349-1] c 44 N79-23481

## STRUCTURAL ENGINEERING

Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N81-12283  
A rectangular rod-wall sound shield  
[NASA-CASE-LAR-12883-1] c 09 N81-29138

## STRUCTURAL FAILURE

Method and apparatus for nondestructive testing of pressure vessels  
[NASA-CASE-NPO-12142-1] c 38 N76-28563

## STRUCTURAL MEMBERS

Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462  
Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955  
All-directional fastener Patent  
[NASA-CASE-XLA-01807] c 15 N71-10799  
Frictionless universal joint Patent  
[NASA-CASE-NPO-10646] c 15 N71-28467  
Fastener stretcher  
[NASA-CASE-GSC-11149-1] c 15 N73-30457  
Method of laminating structural members  
[NASA-CASE-XLA-11028-1] c 24 N74-27035  
Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040  
Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264  
Universal connectors for joining stringers  
[NASA-CASE-LAR-12744-1] c 37 N81-31551  
Mechanical end joint system for structural column elements  
[NASA-CASE-LAR-12482-1] c 37 N82-32732

## STRUCTURAL STABILITY

Latching device  
[NASA-CASE-MFS-21606-1] c 37 N75-19685  
Flanged major modular assembly jig  
[NASA-CASE-MSC-19372-1] c 39 N76-31562

## STRUCTURAL VIBRATION

Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c 09 N70-20737  
Seismic displacement transducer Patent  
[NASA-CASE-XMF-00479] c 14 N70-34794  
Vibrating structure displacement measuring instrument Patent  
[NASA-CASE-XLA-03135] c 32 N71-16428  
Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583

## STRUCTURES

Arbitrarily shaped model survey system Patent  
[NASA-CASE-LAR-10098] c 32 N71-26681

## STRUTS

Energy absorbing structure Patent Application  
[NASA-CASE-MSC-12279-1] c 15 N70-35679  
Collapsible structure for an antenna reflector  
[NASA-CASE-NPO-11751] c 07 N73-24176  
Locking redundant link  
[NASA-CASE-LAR-11900-1] c 37 N79-14382  
Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N81-12283

Multiple pure tone elimination strut assembly — air breathing engines

[NASA-CASE-FRC-11062-1] c 71 N82-16800

## STUDS (STRUCTURAL MEMBERS)

Safety-type locking pin  
[NASA-CASE-MFS-18495] c 15 N72-11385  
Stud-bonding gun  
[NASA-CASE-MFS-20299] c 15 N72-11392  
Insert facing tool — manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MFS-21485-1] c 37 N74-25968

## STYRENES

Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-1] c 27 N78-32256  
Compound oxidized styrylphosphine — flame resistant vinyl polymers  
[NASA-CASE-MSC-14903-2] c 27 N80-10358  
Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-3] c 27 N80-24438  
Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-1] c 27 N80-26447

## SUBLIMATION

Tubular sublimatory evaporator heat sink  
[NASA-CASE-ARC-10912-1] c 34 N77-19353  
Polymeric compositions and their method of manufacture — forming filled polymer systems using cryogenics  
[NASA-CASE-NPO-10424-1] c 27 N81-24258

## SUBMARINES

Low density bismaleimide-carbon microballoon composites — aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184

## SUBMERGING

Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441  
Liquid-immersible electrostatic ultrasonic transducer  
[NASA-CASE-LAR-12465-1] c 33 N82-26572

## SUBMILLIMETER WAVES

Ladder supported ring bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N81-24348

## SUBMINIATURIZATION

Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent  
[NASA-CASE-XNP-00384] c 09 N71-13530

## SUBREFLECTORS

Dish antenna having switchable beamwidth — with truncated concave ellipsoid subreflector  
[NASA-CASE-GSC-11760-1] c 33 N75-19516

## SUBROUTINES

Automatic multi-banking of memory for microprocessors  
[NASA-CASE-NPO-15295-1] c 60 N82-11785

## SUBSONIC FLOW

Leading edge vortex flaps for drag reduction — during subsonic flight  
[NASA-CASE-LAR-12750-1] c 02 N81-19016

## SUBSONIC SPEED

Landing arrangement for aerospace vehicle Patent  
[NASA-CASE-XLA-00805] c 31 N70-38010  
Leading edge curvature based on convective heating Patent  
[NASA-CASE-XLA-01486] c 01 N71-23497

Airfoil shape for flight at subsonic speeds — design analysis and aerodynamic characteristics of the GAW-1 airfoil  
[NASA-CASE-LAR-10585-1] c 02 N76-22154

Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976

## SUBSONIC WIND TUNNELS

Variable geometry wind tunnels  
[NASA-CASE-XLA-07430] c 11 N72-22246

## SUBSTRATES

Means and methods of depositing thin films on substrates Patent  
[NASA-CASE-XNP-00595] c 15 N70-34967  
Solar cell mounting Patent  
[NASA-CASE-XNP-00826] c 03 N71-20895  
Solar panel fabrication Patent  
[NASA-CASE-XNP-03413] c 03 N71-26726  
Fabrication of polycrystalline solar cells on low-cost substrates  
[NASA-CASE-GSC-12022-1] c 44 N76-28635  
Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854  
Attaching of strain gages to substrates  
[NASA-CASE-FRC-10093-1] c 35 N80-20560  
Method for applying photographic resists to otherwise incompatible substrates  
[NASA-CASE-MSC-18107-1] c 27 N81-25209  
Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18737-1] c 25 N81-29180

Method of repairing surface damage to porous refractory substrates — shuttle orbiter tiles

[NASA-CASE-MSC-18736-1] c 27 N81-29231

## Refractory coatings

[NASA-CASE-LEW-13169-2] c 26 N82-30371  
Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659

## SUBSTRUCTURES

Support structure for irradiated elements Patent  
[NASA-CASE-XNP-06031] c 15 N71-15606  
Opto-mechanical subsystem with temperature compensation through isothermal design  
[NASA-CASE-GSC-12059-1] c 35 N77-27366  
System for detecting substructure microfractures and method therefore  
[NASA-CASE-NPO-14192-1] c 39 N80-10507

## SULFATES

Intumescent paints Patent  
[NASA-CASE-ARC-10099-1] c 18 N71-15469

## SULFONES

Electrolytic cell structure  
[NASA-CASE-LAR-11042-1] c 33 N75-27252

## SULFONIC ACID

Intumescent coatings containing 4,4'-dinitrosulfanilide  
[NASA-CASE-LAR-11042-1] c 24 N78-14096  
The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312

## SULFUR COMPOUNDS

Polymeric vehicles as carriers for sulfonic acid salt of nitrosubstituted aromatic amines  
[NASA-CASE-ARC-10325] c 06 N72-25147

## SULFUR DIOXIDES

Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17656  
Simultaneous treatment of SO<sub>2</sub> containing stack gases and waste water  
[NASA-CASE-MSC-16258-1] c 45 N79-12584

## SULFURIC ACID

An improved synthesis of 2,4,8,10-tetroxaspiro (5,5) undecane  
[NASA-CASE-ARC-11243-2] c 23 N80-31472

## SUM RULES

Computing apparatus Patent  
[NASA-CASE-XGS-04765] c 08 N71-18693

## SUN

Sun tracking solar energy collector  
[NASA-CASE-NPO-13921-1] c 44 N79-14526

## SUNGLASSES

Soft frame adjustable eyeglasses Patent  
[NASA-CASE-XMS-06064] c 05 N71-23096

## SUNLIGHT

Illumination system including a virtual light source Patent  
[NASA-CASE-HQN-10781] c 23 N71-30292  
Illumination control apparatus for compensating solar light  
[NASA-CASE-KSC-11010-1] c 74 N79-12890

## SUPERCHARGERS

Supercharged topping rocket propellant feed system  
[NASA-CASE-XLE-02062-1] c 20 N80-14188  
Diesel engine catalytic combustor system — turbocharging  
[NASA-CASE-LEW-12995-1] c 37 N80-26659

## SUPERCONDUCTING MAGNETS

Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423  
Superconducting alternator  
[NASA-CASE-XLE-02824] c 03 N69-39890  
Segmented superconducting magnet for a broadband traveling wave maser Patent  
[NASA-CASE-XGS-10518] c 16 N71-28554  
Superconducting magnet Patent  
[NASA-CASE-XNP-06503] c 23 N71-29049  
Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c 35 N76-18390  
Stable superconducting magnet — high current levels below critical temperature  
[NASA-CASE-XMF-05373-1] c 33 N79-21264

## SUPERCONDUCTIVITY

Superconducting alternator Patent  
[NASA-CASE-XLE-02823] c 09 N71-23443  
System for improving signal-to-noise ratio of a communication signal  
[NASA-CASE-MSC-12259-2] c 07 N72-33146  
Superconductive magnetic-field-trapping device  
[NASA-CASE-XNP-01185] c 26 N73-28710  
Doped Josephson tunneling junction for use in a sensitive IR detector  
[NASA-CASE-NPO-13348-1] c 33 N75-31332

## SUPERCONDUCTORS

Superconductive accelerometer Patent  
[NASA-CASE-XMF-01099] c 14 N71-15969  
Twisted multifilament superconductor  
[NASA-CASE-LEW-11726-1] c 26 N73-26752



- Method of fabricating a twisted composite superconductor  
[NASA-CASE-LEW-11015] c 26 N73-32571  
Germanium coated microbridge and method  
[NASA-CASE-MFS-23274-1] c 33 N78-13320

**SUPERCOOLING**

- Method and apparatus for supercooling and solidifying substances — containless melts and space processing  
[NASA-CASE-MFS-25242-1] c 35 N81-24413

**SUPERFLUIDITY**

- Helium refining by superfluidity Patent  
[NASA-CASE-XNP-00733] c 06 N70-34946  
Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c 36 N76-29575

**SUPERHEATING**

- Thermal energy storage system — operating on superheating of liquids  
[NASA-CASE-MFS-23167-1] c 44 N76-31667

**SUPERHIGH FREQUENCIES**

- Dual band combiner for horn antenna  
[NASA-CASE-NPO-14519-1] c 32 N80-23524

**SUPERPLASTICITY**

- Superplastically formed diffusion bonded metallic structure  
[NASA-CASE-FRC-11026-1] c 24 N82-24296

**SUPERSATURATION**

- Method and apparatus for growth of crystals by pressure reduction of supercritical or subcritical solution  
[NASA-CASE-NPO-15772-1] c 76 N82-23031

**SUPERSONIC AIRCRAFT**

- Variable sweep wing configuration Patent  
[NASA-CASE-XLA-00230] c 02 N70-33255  
Variable sweep aircraft wing Patent  
[NASA-CASE-XLA-00350] c 02 N70-38011  
Variable sweep aircraft Patent  
[NASA-CASE-XLA-03659] c 02 N71-11041  
Translating horizontal tail Patent  
[NASA-CASE-XLA-08801-1] c 02 N71-11043  
Supersonic aircraft Patent  
[NASA-CASE-XLA-04451] c 02 N71-12243  
Absorptive splitter for closely spaced supersonic engine air inlets Patent  
[NASA-CASE-XLA-02865] c 28 N71-15563  
Oblique-wing supersonic aircraft  
[NASA-CASE-ARC-10470-3] c 05 N76-29217

**SUPERSONIC COMBUSTION**

- Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502  
Hypersonic airbreathing missile  
[NASA-CASE-LAR-12264-1] c 15 N78-32168

**SUPERSONIC DRAG**

- Annular supersonic decelerator or drogue Patent  
[NASA-CASE-XLE-00222] c 02 N70-37939

**SUPERSONIC FLIGHT**

- Variable sweep wing aircraft Patent  
[NASA-CASE-XLA-00221] c 02 N70-33266  
High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088

**SUPERSONIC FLOW**

- Optical probing of supersonic flows with statistical correlation  
[NASA-CASE-MFS-20642] c 14 N72-21407  
Stagnation pressure probe — for measuring pressure of supersonic gas streams  
[NASA-CASE-LAR-11139-1] c 35 N74-32878

**SUPERSONIC INLETS**

- Airflow control system for supersonic inlets  
[NASA-CASE-LEW-11188-1] c 02 N74-20646  
Shock position sensor for supersonic inlets — measuring pressure in the throat of a supersonic inlet  
[NASA-CASE-LEW-11915-1] c 35 N76-14431  
Hypersonic airbreathing missile  
[NASA-CASE-LAR-12264-1] c 15 N78-32168

**SUPERSONIC NOZZLES**

- Penshape exhaust nozzle for supersonic engine Patent  
[NASA-CASE-XLE-00057] c 28 N70-38711  
Telescoping-spoke supersonic inlet for aircraft engines Patent  
[NASA-CASE-XLE-00005] c 28 N70-39899  
Electric arc apparatus Patent  
[NASA-CASE-XAC-01677] c 09 N71-20816  
Aircraft engine nozzle  
[NASA-CASE-ARC-10977-1] c 07 N80-32392

**SUPERSONIC SPEEDS**

- Continuously operating induction plasma accelerator Patent  
[NASA-CASE-XLA-01354] c 25 N70-36946  
Static pressure probe  
[NASA-CASE-LAR-11552-1] c 35 N76-14429

**SUPERSONIC TRANSPORTS**

- Position location system and method Patent  
[NASA-CASE-GSC-10087-2] c 21 N71-13958

- Traffic control system and method Patent  
[NASA-CASE-GSC-10087-1] c 02 N71-19287  
Position location system and method  
[NASA-CASE-GSC-10087-3] c 07 N72-12080  
Doppler compensation by shifting transmitted object frequency within limits  
[NASA-CASE-GSC-10087-4] c 07 N73-20174  
Supersonic transport — using canard surfaces  
[NASA-CASE-LAR-11932-1] c 05 N78-32086

**SUPERSONIC WIND TUNNELS**

- Wind tunnel  
[NASA-CASE-LAR-10135-1] c 09 N79-21083  
A rectangular rod-wall sound shield  
[NASA-CASE-LAR-12883-1] c 09 N81-29138

**SUPPORT INTERFERENCE**

- Spherical bearing — to reduce vibration effects  
[NASA-CASE-MFS-23447-1] c 37 N79-11404

**SUPPORT SYSTEMS**

- Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604  
Support structure for irradiated elements Patent  
[NASA-CASE-XNP-06031] c 15 N71-15606  
Multilegged support system Patent  
[NASA-CASE-XLA-01326] c 11 N71-21481  
Adjustable support  
[NASA-CASE-NPO-10721] c 15 N72-27484  
Hydrostatic bearing support  
[NASA-CASE-LEW-11158-1] c 37 N77-28486  
Metric half-span model support system  
[NASA-CASE-LAR-12441-1] c 09 N82-23254

**SUPPORTS**

- A support technique for vertically oriented launch vehicles  
[NASA-CASE-XLA-02704] c 11 N69-21540  
Pneumatic mirror support system  
[NASA-CASE-XLA-03271] c 11 N69-24321  
Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485  
Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701  
Swivel support for gas bearings Patent  
[NASA-CASE-XMF-07808] c 15 N71-23812  
Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c 14 N71-26627  
Angular displacement indicating gas bearing support system Patent  
[NASA-CASE-XLA-09346] c 15 N71-28740  
Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123  
Fine adjustment mount  
[NASA-CASE-MFS-20249] c 15 N72-11386  
Expandable support means  
[NASA-CASE-NPO-11059] c 15 N72-17454  
Optical system support apparatus  
[NASA-CASE-XER-07896-2] c 23 N72-22673  
Fixture for supporting articles during vibration tests  
[NASA-CASE-MFS-20523] c 14 N72-27412  
Test stand system for vacuum chambers  
[NASA-CASE-MFS-21362] c 11 N73-20267  
Collapsible structure for an antenna reflector  
[NASA-CASE-NPO-11751] c 07 N73-24176  
Method of making porous conductive supports for electrodes — by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692  
Thrust-isolating mounting — characteristics of support for loads mounted in spacecraft  
[NASA-CASE-MFS-21680-1] c 18 N74-27397  
Variable contour securing system  
[NASA-CASE-MSC-16270-1] c 37 N78-27423  
Heat treat fixture and method of heat treating  
[NASA-CASE-LAR-11821-1] c 26 N80-28492  
Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-2] c 52 N81-25661

**SUPPRESSORS**

- Electronic background suppression method and apparatus for a field scanning sensor  
[NASA-CASE-XGS-05211] c 07 N69-39980

**SURFACE ACOUSTIC WAVE DEVICES**

- Distributed feedback acoustic surface wave oscillator  
[NASA-CASE-NPO-13673-1] c 71 N77-26919

**SURFACE DEFECTS**

- Microwave flaw detector Patent  
[NASA-CASE-ARC-10009-1] c 15 N71-17822  
Method and device for detection of surface discontinuities or defects  
[NASA-CASE-MSC-14187-1] c 35 N74-32879  
Method of repairing surface damage to porous refractory substrates — shuttle orbiter tiles  
[NASA-CASE-MSC-18736-1] c 27 N81-29231

**SURFACE DIFFUSION**

- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-01765] c 18 N71-10772  
Double-beam optical method and apparatus for measuring thermal diffusivity and other molecular dynamic processes in utilizing the transient thermal lens effect  
[NASA-CASE-NPO-14657-1] c 74 N81-17887

**SURFACE FINISHING**

- Method of forming transparent films of ZnO  
[NASA-CASE-FRC-10019] c 15 N73-12487  
Device and method for determining X ray reflection efficiency of optical surfaces  
[NASA-CASE-MFS-20243] c 23 N73-13662  
Surface finishing — for aircraft wings  
[NASA-CASE-MSC-12631-1] c 24 N77-28225  
Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437  
Surface finishing  
[NASA-CASE-MSC-12631-3] c 27 N81-14077  
Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455  
Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 27 N81-22190  
Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N82-26575  
Surface texturing of fluoropolymers  
[NASA-CASE-LEW-13028-1] c 27 N82-33521

**SURFACE IONIZATION**

- Field ionization electrodes Patent  
[NASA-CASE-ERC-10013] c 09 N71-26678  
Method and apparatus for detecting surface ions on silicon diodes and transistors  
[NASA-CASE-ERC-10325] c 15 N72-25457

**SURFACE LAYERS**

- Bismuth-lead coatings for gas bearings used in atmospheric environments and vacuum chambers Patent  
[NASA-CASE-XGS-02011] c 15 N71-20739  
Method and apparatus for stable silicon dioxide layers on silicon grown in silicon nitride ambient  
[NASA-CASE-ERC-10073-1] c 24 N74-19769  
Method of neutralizing the corrosive surface of amine-cured epoxy resins  
[NASA-CASE-GSC-12686-1] c 27 N82-10227  
Pretreatment method for anti-wettable materials  
[NASA-CASE-XMS-03537] c 15 N69-21471  
Ablation article and method  
[NASA-CASE-LAR-10439-1] c 33 N73-27796  
Dual measurement ablation sensor  
[NASA-CASE-LAR-10105-1] c 34 N74-15652  
Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c 36 N74-20009  
Apparatus for microbiological sampling — including automatic swabbing  
[NASA-CASE-LAR-11069-1] c 35 N75-12272  
Penetrometer — for determining load bearing characteristics of inclined surfaces  
[NASA-CASE-NPO-11103-1] c 35 N77-27367  
Device for measuring the contour of a surface  
[NASA-CASE-LAR-11869-1] c 74 N78-27904  
Displacement probes with self-contained exciting medium  
[NASA-CASE-LAR-11690-1] c 35 N80-14371  
Apparatus for electrolytically tapered or contoured cavities  
[NASA-CASE-XNP-08835-1] c 37 N80-14395  
Tactile sensing system — manipulator controllers  
[NASA-CASE-NPO-15094-1] c 33 N81-16386

**SURFACE REACTIONS**

- Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446

**SURFACE ROUGHNESS**

- Surface roughness detector Patent  
[NASA-CASE-XLA-00203] c 14 N70-34161  
Optical inspection apparatus Patent  
[NASA-CASE-XMF-00462] c 14 N70-34298  
Contour surveying system Patent  
[NASA-CASE-XLA-08646] c 14 N71-17586  
Surface roughness measuring system — synthetic aperture radar measurements of ocean wave height and terrain peaks  
[NASA-CASE-NPO-13862-1] c 35 N79-10391  
Ion beam textured graphite electrode plates — high efficiency electron tube devices  
[NASA-CASE-LEW-12919-2] c 24 N82-26386  
Texturing polymer surfaces by transfer casting — cardiovascular prostheses  
[NASA-CASE-LEW-13120-1] c 27 N82-28440

**SURFACE ROUGHNESS EFFECTS**

- Meteorological balloon Patent  
[NASA-CASE-XMF-04163] c 02 N71-23007

**SURFACE TEMPERATURE**

- Curved film cooling admission tube  
[NASA-CASE-LEW-13174-1] c 34 N81-12363

**SURFACE VEHICLES**

- Optimal control system for an electric motor driven vehicle  
[NASA-CASE-NPO-11210] c 11 N72-20244



Vehicle for use in planetary exploration  
[NASA-CASE-NPO-11366] c 11 N73-26238

Short range laser obstacle detector --- for surface  
- vehicles using laser diode array  
[NASA-CASE-NPO-11856-1] c 36 N74-15145

Vehicle locating system utilizing AM broadcasting station  
cameras  
[NASA-CASE-NPO-13217-1] c 32 N75-26194

Vehicular impact absorption system  
[NASA-CASE-NPO-14014-1] c 37 N79-10420

Phase sensitive guidance sensor for wire-following  
vehicles  
[NASA-CASE-NPO-15341-1] c 33 N82-12346

**SURFACE WAVES**  
Antenna design for surface wave suppression Patent  
[NASA-CASE-XLA-10772] c 07 N71-28980

**SURFACES**  
Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176

Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c 14 N71-22995

Three-axis adjustable loading structure  
[NASA-CASE-FRC-10051-1] c 35 N74-13129

Photoelectron spectrometer with means for stabilizing  
sample surface potential  
[NASA-CASE-NPO-13772-1] c 35 N78-10429

**SURFACTANTS**  
Surfactant-assisted liquefaction of particulate  
- carbonaceous substances  
[NASA-CASE-NPO-13904-1] c 25 N79-11152

**SURGERY**  
Tissue macerating instrument  
[NASA-CASE-LEW-12668-1] c 52 N78-14773

Intra-ocular pressure normalization technique and  
equipment  
[NASA-CASE-LEW-12955-1] c 52 N80-14684

**SURGES**  
Transient-compensated SCR inverter  
[NASA-CASE-XLA-08507] c 09 N69-39984

Turn on transient limiter Patent  
[NASA-CASE-GSC-10413] c 10 N71-26531

**SURGICAL INSTRUMENTS**  
Ophthalmic method and apparatus  
[NASA-CASE-LEW-11669-1] c 05 N73-27062

Ophthalmic liquefaction pump  
[NASA-CASE-LEW-12051-1] c 52 N75-33640

**SURVIVAL EQUIPMENT**  
Survival couch Patent  
[NASA-CASE-XLA-00118] c 05 N70-33285

Life preserver Patent  
[NASA-CASE-XMS-00864] c 05 N70-36493

Soft frame adjustable eyeglasses Patent  
[NASA-CASE-XMS-00604] c 05 N71-23096

**SUSPENDING (HANGING)**  
Parallel motion suspension device Patent  
[NASA-CASE-XNP-01567] c 15 N70-41310

Reduced gravity simulator Patent  
[NASA-CASE-XLA-01787] c 11 N71-16028

Suspended mass impact damper Patent  
[NASA-CASE-LAR-10193-1] c 15 N71-27146

**SUSPENSION SYSTEMS (VEHICLES)**  
Suspension system for a wheel rolling on a flat track  
--- bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587

**SWEAT**  
Sweat collection capsule  
[NASA-CASE-ARC-11031-1] c 52 N81-29763

**SWEAT COOLING**  
Transpiration cooled turbine blade manufactured from  
wires Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226

Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075

Method of electroforming a rocket chamber  
[NASA-CASE-LEW-11118-1] c 20 N74-32919

**SWEEP CIRCUITS**  
Multiple slope sweep generator Patent  
[NASA-CASE-XMS-03542] c 09 N71-28926

**SWEEP EFFECT**  
High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088

Acoustically swept rotor --- helicopter noise reduction  
[NASA-CASE-AFC-11106-1] c 05 N80-14107

**SWEEP FREQUENCY**  
Swept group delay measurement  
[NASA-CASE-NPO-13909-1] c 33 N78-25319

**SWELLING**  
Intumescent composition, foamed product prepared  
therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572

**SWEEP WINGS**  
Supersonic aircraft Patent  
[NASA-CASE-XLA-04451] c 02 N71-12243

Leading edge vortex flaps for drag reduction --- during  
subsonic flight  
[NASA-CASE-LAR-12750-1] c 02 N81-19016

**SWIRLING**

Slosh alleviator Patent  
[NASA-CASE-XLA-05749] c 15 N71-19569

Swirl can primary combustor  
[NASA-CASE-LEW-11326-1] c 23 N73-30665

**SWITCHES**

Switching mechanism with energy storage means  
Patent  
[NASA-CASE-XGS-00473] c 03 N70-38713

Digital memory in which the driving of each word location  
is controlled by a switch core Patent  
[NASA-CASE-XNP-01466] c 10 N71-26434

RF controlled solid state switch  
[NASA-CASE-ARC-10136-1] c 09 N72-22202

High power RF coaxial switch  
[NASA-CASE-NPO-14229-1] c 33 N80-18285

Fiber optic crossbar switch for automatically patching  
optical signals  
[NASA-CASE-KSC-11104-1] c 74 N81-12862

Automatic thermal switch  
[NASA-CASE-GSC-12415-1] c 33 N82-24419

Tnac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N82-26574

**SWITCHING CIRCUITS**

Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500

Power control circuit  
[NASA-CASE-XNP-02713] c 10 N69-39888

A method for selective gold diffusion of monolithic silicon  
devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148

Space vehicle electrical system Patent  
[NASA-CASE-XMF-00517] c 03 N70-34157

High speed low level electrical stepping switch Patent  
[NASA-CASE-XAC-00060] c 09 N70-39915

Switching circuit employing regeneratively connected  
complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032

Electronic beam switching commutator Patent  
[NASA-CASE-XGS-01451] c 09 N71-10677

Electronic amplifier with power supply switching  
Patent  
[NASA-CASE-XMS-00945] c 09 N71-10798

SCR blocking pulse gate amplifier Patent  
[NASA-CASE-XLA-07497] c 09 N71-12514

Magnetic core current steering commutator Patent  
[NASA-CASE-NPO-10201] c 08 N71-18694

A dc-coupled noninverting one-shot  
Patent  
[NASA-CASE-XNP-09450] c 10 N71-18723

Reversible current control apparatus Patent  
[NASA-CASE-XLA-09371] c 10 N71-18724

Exclusive-Or digital logic module Patent  
[NASA-CASE-XLA-07732] c 08 N71-18751

Polarization diversity monopulse tracking receiver  
Patent  
[NASA-CASE-XGS-03501] c 09 N71-20864

Sight switch using an infrared source and sensor  
Patent  
[NASA-CASE-XMF-03934] c 09 N71-22985

Complementary regenerative switch  
Patent  
[NASA-CASE-XGS-02751] c 09 N71-23015

Drive circuit utilizing two cores Patent  
[NASA-CASE-XNP-01318] c 10 N71-23033

Pulse modulator providing fast rise and fall times  
Patent  
[NASA-CASE-XMS-04919] c 09 N71-23270

Polarity sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271

Increasing efficiency of switching type regulator circuits  
Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316

Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c 09 N71-23548

Multialarm summary alarm Patent  
[NASA-CASE-XLE-03061-1] c 10 N71-24798

Switching circuit Patent  
[NASA-CASE-XNP-06505] c 10 N71-24799

Inverter with means for base current shaping for  
sweeping charge carriers from base region Patent  
[NASA-CASE-XGS-06226] c 10 N71-25950

Current steering switch Patent  
[NASA-CASE-XNP-08567] c 09 N71-26000

Control apparatus for applying pulses of selectively  
predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418

Turn on transient limiter Patent  
[NASA-CASE-GSC-10413] c 10 N71-26531

Method and means for providing an absolute power  
measurement capability Patent  
[NASA-CASE-ERC-11020] c 14 N71-26774

Transistor drive regulator Patent  
[NASA-CASE-LEW-10233] c 10 N71-27126

Compensating bandwidth switching transients in an  
amplifier circuit Patent  
[NASA-CASE-XNP-01107] c 10 N71-28859

Monostable multivibrator with complementary NOR  
gates Patent  
[NASA-CASE-MS-13492-1] c 10 N71-28860

Digital memory sense amplifying means Patent  
[NASA-CASE-XNP-01012] c 08 N71-28925

Current regulating voltage divider  
[NASA-CASE-MFS-20935] c 09 N71-34212

Reference voltage switching unit  
[NASA-CASE-NPO-11253] c 09 N72-17157

Optimum performance spacecraft solar cell system  
[NASA-CASE-GSC-10669-1] c 03 N72-20031

Flow rate switch  
[NASA-CASE-NPO-10722] c 09 N72-20199

Switching regulator  
[NASA-CASE-LEW-11005-1] c 09 N72-21243

Data multiplexer using tree switching configuration  
[NASA-CASE-NPO-11333] c 08 N72-22162

Pulse coupling circuit  
[NASA-CASE-LEW-10433-1] c 09 N72-22197

Solid state remote circuit selector switch  
[NASA-CASE-LEW-10387] c 09 N72-22201

Pressure operated electrical switch responsive to a  
pressure decrease after a pressure increase  
[NASA-CASE-LAR-10137-1] c 09 N72-22204

Fast response low power drain logic circuits  
[NASA-CASE-GSC-10878-1] c 10 N72-22236

CRT blanking and brightness control circuit  
[NASA-CASE-KSC-10647-1] c 10 N72-31273

Electronic video editor  
[NASA-CASE-KSC-10003] c 10 N73-13235

Radiation sensitive solid state switch  
[NASA-CASE-NPO-10817-1] c 08 N73-30135

Transparent switchboard  
[NASA-CASE-MS-13746-1] c 10 N73-32143

High isolation RF signal selection switches  
[NASA-CASE-NPO-13081-1] c 33 N74-22814

Isolated output system for a class D switching-mode  
amplifier  
[NASA-CASE-MFS-21616-1] c 33 N75-30429

Dual digital video switcher  
[NASA-CASE-KSC-10782-1] c 33 N75-30431

Multi-computer multiple data path hardware exchange  
system  
[NASA-CASE-NPO-13422-1] c 60 N76-14818

Sustained arc ignition system  
[NASA-CASE-LEW-12444-1] c 33 N77-28385

Window comparator  
[NASA-CASE-FRC-10090-1] c 33 N78-18308

Module failure isolation circuit for paralleled inverters  
--- preventing system failure during power conditioning for  
spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254

System for automatically switching transformer coupled  
lines  
[NASA-CASE-MS-16697-1] c 33 N79-28415

Self-reconfiguring solar cell system  
[NASA-CASE-LEW-12586-1] c 44 N80-14472

Fiber optic crossbar switch for automatically patching  
optical signals  
[NASA-CASE-KSC-11104-1] c 74 N81-12862

Push-pull converter with energy saving circuit for  
protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404

Active lamp pulse driver circuit --- for use in laser  
transmitters  
[NASA-CASE-GSC-12566-1] c 36 N82-10390

Microwave switching power divider --- antenna feeds  
[NASA-CASE-GSC-12420-1] c 33 N82-16340

Control means for a solid state crossbar switch  
[NASA-CASE-NPO-15066-1] c 33 N82-29538

**SWITCHING THEORY**  
Multiple circuit switch apparatus with improved pivot  
actuator structure Patent  
[NASA-CASE-XAC-03777] c 10 N71-15909

**SWIVELS**  
Swivel support for gas bearings Patent  
[NASA-CASE-XMF-07808] c 15 N71-23812

**SYNCHRONISM**  
Time division multiplex system  
[NASA-CASE-XGS-05918] c 07 N69-39974

Means for generating a sync signal in an FM  
communication system Patent  
[NASA-CASE-XNP-10830] c 07 N71-11281

Method of resolving clock synchronization error and  
means therefor Patent  
[NASA-CASE-XNP-08875] c 10 N71-23099

Passive synchronized spike generator with high input  
impedance and low output impedance and capacitor power  
supply Patent  
[NASA-CASE-XGS-03632] c 09 N71-23311

Time synchronization system utilizing moon reflected  
coded signals Patent  
[NASA-CASE-NPO-10143] c 10 N71-26326

Rapid sync acquisition system Patent  
[NASA-CASE-NPO-10214] c 10 N71-26577



## SYNCHRONIZED OSCILLATORS

- Phase demodulation system with two phase locked loops Patent  
[NASA-CASE-XNP-00777] c 10 N71-19469
- Phase locked phase modulator including a voltage controlled oscillator Patent  
[NASA-CASE-XNP-05382] c 10 N71-23544
- Automatic frequency control loop including synchronous switching circuits  
[NASA-CASE-XSC-10393] c 09 N72-21247

## SYNCHRONIZERS

- Burst synchronization detection system Patent  
[NASA-CASE-XMS-05605-1] c 10 N71-19468
- Time division radio relay synchronizing system using different sync code words for in sync and out of sync conditions Patent  
[NASA-CASE-GSC-10373-1] c 07 N71-19773
- Synchronous servo loop control system Patent  
[NASA-CASE-XNP-03744] c 10 N71-20448
- Digital synchronizer Patent  
[NASA-CASE-NPO-10851] c 07 N71-24613
- Video sync processor Patent  
[NASA-CASE-KSC-10002] c 10 N71-25865
- Pulse code modulated signal synchronizer  
[NASA-CASE-MS-12462-1] c 32 N74-20809
- Pulse code modulated signal synchronizer  
[NASA-CASE-MS-12494-1] c 32 N74-20810
- System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c 33 N75-19519
- Telemetry synchronizer  
[NASA-CASE-GSC-11868-1] c 17 N76-22245
- Memory-based frame synchronizer --- for digital communication systems  
[NASA-CASE-GSC-12430-1] c 60 N82-16747

## SYNCHRONOUS MOTORS

- Synchronous dc direct drive system Patent  
[NASA-CASE-GSC-10065-1] c 10 N71-27136
- Motor run-up system --- power lines  
[NASA-CASE-NPO-13374-1] c 33 N75-19524

## SYNCHRONOUS SATELLITES

- Position location system and method Patent  
[NASA-CASE-GSC-10087-2] c 21 N71-13958
- Serrodyne frequency converter re-entrant amplifier system Patent  
[NASA-CASE-XGS-01022] c 07 N71-16088
- Traffic control system and method Patent  
[NASA-CASE-GSC-10087-1] c 02 N71-19287
- Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c 07 N71-19854
- Satellite interface synchronization system  
[NASA-CASE-GSC-10390-1] c 07 N72-11149
- Synchronous orbit battery cyclor  
[NASA-CASE-GSC-11211-1] c 03 N72-25020
- Systems and methods for determining radio frequency interference  
[NASA-CASE-GSC-12150-1] c 32 N79-11265
- Satellite personal communications system  
[NASA-CASE-NPO-14480-1] c 32 N80-20448

## SYNTHESIS

- Synthesis of polymeric schiff bases by schiff-base exchange reactions Patent  
[NASA-CASE-XMF-08651] c 06 N71-11236
- Preparation of ordered poly /arylenesiloxane/ polymers  
[NASA-CASE-XMF-10753] c 06 N71-11237
- Imidazopyrrolone/imide copolymers Patent  
[NASA-CASE-XLA-08802] c 06 N71-11238
- Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids  
[NASA-CASE-LEW-11325-1] c 06 N73-27980

## SYNTHESIS (CHEMISTRY)

- Synthesis of dawsonites  
[NASA-CASE-ARC-113261-1] c 25 N80-31490
- Prepolymer dianhydrides  
[NASA-CASE-NPO-13899-1] c 27 N80-32515
- Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104
- Bifunctional monomers having terminal oxime and cyano or amidine groups  
[NASA-CASE-ARC-11253-3] c 27 N81-24256
- Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13504-1] c 27 N81-27279
- Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174
- Electrically conductive palladium containing polyimide films  
[NASA-CASE-LAR-12705-1] c 25 N82-26396

## SYNTHESIZERS

- Digitally controlled frequency synthesizer Patent  
[NASA-CASE-XGS-02317] c 09 N71-23525

## SYNTHETIC APERTURE RADAR

- Surface roughness measuring system --- synthetic aperture radar measurements of ocean wave height and terrain peaks  
[NASA-CASE-NPO-13862-1] c 35 N79-10391
- Azimuth correlator for real-time synthetic aperture radar image processing  
[NASA-CASE-NPO-14019-1] c 32 N79-14268
- Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-1] c 32 N79-19195
- Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N80-32607
- An electro-optical Doppler tracker means and method for optical correlation of synthetic aperture radar data  
[NASA-CASE-NPO-14998-1] c 33 N81-15194
- Synthetic aperture radar target simulator  
[NASA-CASE-NPO-15024-1] c 32 N82-10286
- Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297
- A pipelined digital SAR azimuth correlator using hybrid FFT/transversal-filter  
[NASA-CASE-NPO-15519-1] c 32 N82-12298
- Wideband passive synthetic-aperture multichannel receiver  
[NASA-CASE-NPO-15651-1] c 32 N82-26523
- Method and apparatus for Delta K synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N82-28502

## SYNTHETIC FIBERS

- Fluid containers and resealable septum therefor Patent  
[NASA-CASE-NPO-10123] c 15 N71-24835
- Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MS-12109] c 18 N71-26285
- Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747
- Polymers electrolytic hygrometer  
[NASA-CASE-NPO-13948-1] c 35 N78-25391
- Process for spinning flame retardant elastomeric compositions --- fabricating synthetic fibers for high oxygen environments  
[NASA-CASE-MS-14331-3] c 27 N78-32262
- Insoluble polyelectrolyte and ion-exchange hollow fiber impregnated therewith  
[NASA-CASE-NPO-13530-1] c 25 N81-17187
- Method of carbonizing polyacrylonitrile fibers and resulting product  
[NASA-CASE-ARC-11261-1] c 24 N81-29164

## SYNTHETIC FUELS

- Molten salt pyrolysis of latex --- synthetic hydrocarbon fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261
- Solar heated fluidized bed gasification system  
[NASA-CASE-NPO-15071-1] c 44 N82-16475

## SYNTHETIC RESINS

- Coating process  
[NASA-CASE-XNP-06508] c 18 N69-39895
- Phosphorus-containing bisimide resins  
[NASA-CASE-ARC-11321-1] c 27 N81-27272
- Method for forming pyrrone molding powders and products of said method  
[NASA-CASE-LAR-10423-1] c 23 N82-29358

## SYNTHETIC RUBBERS

- Process for the preparation of polycarbonylphosphazenes --- thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271

## SYRINGES

- Micro-fluid exchange coupling apparatus  
[NASA-CASE-ARC-11114-1] c 51 N81-14605
- Automated syringe sampler --- remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407

## SYSTEM EFFECTIVENESS

- System for the measurement of ultra-low stray light levels --- determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865

## SYSTEM FAILURES

- Tape recorder Patent  
[NASA-CASE-XGS-08259] c 14 N71-23698
- Fault tolerant clock apparatus utilizing a controlled minority of clock elements  
[NASA-CASE-MS-12531-1] c 35 N75-30504
- Apparatus for sensor failure detection and correction in a gas turbine engine control system  
[NASA-CASE-LEW-12907-2] c 07 N81-19115

## SYSTEMS ANALYSIS

- Analog-to-digital converter analyzing system  
[NASA-CASE-NPO-10560] c 08 N72-22166

## SYSTEMS ENGINEERING

- Magnetohydrodynamic induction machine  
[NASA-CASE-XNP-07481] c 25 N69-21929

- Gravity stabilized flying vehicle Patent  
[NASA-CASE-MS-12111-1] c 02 N71-11039
- Solar battery with interconnecting means for plural cells Patent  
[NASA-CASE-XNP-06506] c 03 N71-11050
- Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190
- Multi-feed cone Cassegrain antenna Patent  
[NASA-CASE-NPO-10539] c 07 N71-11285
- Viscous-pendulum-damper Patent  
[NASA-CASE-XLA-02079] c 12 N71-16894
- Out of tolerance warning alarm system for plurality of monitored circuits Patent  
[NASA-CASE-XMS-10984-1] c 10 N71-19417
- Wide range data compression system Patent  
[NASA-CASE-XGS-02612] c 08 N71-19435
- Space surf heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439
- Biomedical radiation detecting probe Patent  
[NASA-CASE-XMS-01177] c 05 N71-19440
- High speed binary to decimal conversion system Patent  
[NASA-CASE-XGS-01230] c 08 N71-19544
- Evaporant source for vapor deposition Patent  
[NASA-CASE-XMF-06065] c 15 N71-20395
- Method and apparatus for making a heat insulating and ablative structure Patent  
[NASA-CASE-XMS-02009] c 33 N71-20834
- Polarization diversity monopulse tracking receiver Patent  
[NASA-CASE-XGS-03501] c 09 N71-20864
- Inflatable support structure Patent  
[NASA-CASE-XLA-01731] c 32 N71-21045
- Fast opening diaphragm Patent  
[NASA-CASE-XLA-03660] c 15 N71-21060
- Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721
- Apparatus for machining geometric cones Patent  
[NASA-CASE-XMS-04292] c 15 N71-22722
- Spin forming tubular elbows Patent  
[NASA-CASE-XMF-01083] c 15 N71-22723
- Spacecraft airlock Patent  
[NASA-CASE-XLA-02050] c 31 N71-22968
- Station keeping of a gravity gradient stabilized satellite Patent  
[NASA-CASE-XLA-03132] c 31 N71-22969
- Filler valve Patent  
[NASA-CASE-XNP-01747] c 15 N71-23024
- Refrigeration apparatus Patent  
[NASA-CASE-XNP-08877] c 15 N71-23025
- Reduced bandwidth video communication system utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c 07 N71-23026
- Multiple environment materials test chamber having a multiple port X-ray tube for irradiating a plurality of samples Patent  
[NASA-CASE-XMS-02930] c 11 N71-23042
- Variable duration pulse integrator Patent  
[NASA-CASE-XLA-01219] c 10 N71-23084
- Sealed electrochemical cell provided with a flexible casing Patent  
[NASA-CASE-XGS-01513] c 03 N71-23336
- Extended area semiconductor radiation detectors and a novel readout arrangement Patent  
[NASA-CASE-XGS-03230] c 14 N71-23401
- Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790
- Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597
- Method of attaching a cover glass to a silicon solar cell Patent  
[NASA-CASE-XLE-08569-2] c 03 N71-24681
- Altitude control system for sounding rockets Patent  
[NASA-CASE-XGS-01654] c 31 N71-24750
- Temperature telemetric transmitter Patent  
[NASA-CASE-NPO-10649] c 07 N71-24840
- Tuning arrangement for an electron discharge device or the like Patent  
[NASA-CASE-XNP-09771] c 09 N71-24841
- Broadband modified turnstile antenna Patent  
[NASA-CASE-MS-12209] c 09 N71-24842
- Apparatus for determining the deflection of an electron beam impinging on a target Patent  
[NASA-CASE-XMF-06617] c 09 N71-24843
- BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890
- Noninterruptable digital counting system Patent  
[NASA-CASE-NXP-09759] c 08 N71-24891
- Duct coupling for single-handed operation Patent  
[NASA-CASE-MFS-20395] c 15 N71-24903
- Brushless direct current tachometer Patent  
[NASA-CASE-MFS-20385] c 09 N71-24904
- Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975



- Internal work light Patent  
[NASA-CASE-XKS-05932] c 09 N71-26787
- Apparatus for inspecting microfilm Patent  
[NASA-CASE-MFS-20240] c 14 N71-26788
- Apparatus for remote measurement of displacement of marks on a specimen undergoing a tensile test  
[NASA-CASE-NPO-10778] c 14 N72-11364
- Optimum performance spacecraft solar cell system  
[NASA-CASE-GSC-10669-1] c 03 N72-20031
- Electric storage battery  
[NASA-CASE-NPO-11021] c 03 N72-20032
- Spacecraft attitude control method and apparatus  
[NASA-CASE-HQN-10439] c 21 N72-21624
- Light sensor  
[NASA-CASE-NPO-11311] c 14 N72-25414
- Flight control system  
[NASA-CASE-MSC-13397-1] c 21 N72-25595
- Program for computer aided reliability estimation  
[NASA-CASE-NPO-13086-1] c 15 N73-12495
- Measurement system  
[NASA-CASE-MFS-20658-1] c 14 N73-30386
- Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397
- System for calibrating pressure transducer  
[NASA-CASE-LAR-10910-1] c 35 N74-13132
- Three mirror glancing incidence system for X-ray telescope  
[NASA-CASE-MFS-21372-1] c 74 N74-27866
- Holographic system for nondestructive testing  
[NASA-CASE-MFS-21704-1] c 35 N75-25124
- Compact pulsed laser having improved heat conduction  
[NASA-CASE-NPO-13147-1] c 36 N77-25502
- Tetherline system for orbiting satellites  
[NASA-CASE-MFS-23564-1] c 15 N78-25119
- Non-tracking solar energy collector system  
[NASA-CASE-NPO-13813-1] c 44 N78-31526
- Horizontally mounted solar collector  
[NASA-CASE-MFS-23349-1] c 44 N79-23481
- Contour measurement system  
[NASA-CASE-MFS-23726-1] c 43 N79-26439
- Redundant motor drive system  
[NASA-CASE-MFS-23777-1] c 37 N80-32716
- System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724

## T

## TACHOMETERS

- Digital cardiometer system Patent  
[NASA-CASE-XMS-02399] c 05 N71-22896
- Brushless direct current tachometer Patent  
[NASA-CASE-MFS-20385] c 09 N71-24904
- Ratometer  
[NASA-CASE-MFS-20418] c 14 N73-24473
- Tachometer  
[NASA-CASE-MFS-23175-1] c 35 N77-30436
- A brushless dc tachometer  
[NASA-CASE-NPO-15706-1] c 35 N82-26633

## TAIL ASSEMBLIES

- Surface conforming thermal/pressure seal — tail assemblies of space shuttle orbiters  
[NASA-CASE-MSC-18422-1] c 37 N82-16408
- Missile rolling tail brake torque system — simulating bearing friction on canard controlled missiles  
[NASA-CASE-LAR-12751-1] c 37 N82-26675

## TAKEOFF

- Airplane take-off performance indicator Patent  
[NASA-CASE-XLA-00100] c 14 N70-36807
- Aircraft instrument Patent  
[NASA-CASE-XLA-00487] c 14 N70-40157

## TANGENTS

- Derivation of a tangent function using an integrated circuit four-quadrant multiplier  
[NASA-CASE-MSC-13907-1] c 10 N73-26230

## TANK GEOMETRY

- Tank construction for space vehicles Patent  
[NASA-CASE-XMF-01899] c 31 N70-41948

## TANKS (CONTAINERS)

- Penetrating radiation system for detecting the amount of liquid in a tank Patent  
[NASA-CASE-MSC-12280] c 27 N71-16348
- Method for leakage testing of tanks Patent  
[NASA-CASE-XMF-02392] c 32 N71-24285
- Floating baffle to improve efficiency of liquid transfer from tanks  
[NASA-CASE-KSC-10639] c 15 N73-26472
- Method of producing a storage bulb for an atomic hydrogen maser  
[NASA-CASE-NPO-13050-1] c 36 N75-15029

## TANTALUM

- Thermionic tantalum emitter doped with oxygen Patent Application  
[NASA-CASE-NPO-11138] c 03 N70-34646
- Arc electrode of graphite with ball tip Patent  
[NASA-CASE-XLE-04788] c 09 N71-22987
- Trialkyl-dihalotantalum and niobium compounds Patent  
[NASA-CASE-XNP-04023] c 06 N71-28808
- Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c 35 N77-32454

## TANTALUM ALLOYS

- Evaporant holder  
[NASA-CASE-XLA-03105] c 15 N69-27483
- Tantalum modified ferritic iron base alloys  
[NASA-CASE-LEW-12095-1] c 26 N78-18182

## TANTALUM CARBIDES

- Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N76-17206

## TANTALUM OXIDES

- Thin film temperature sensor and method of making same  
[NASA-CASE-NPO-11775] c 26 N72-28761

## TAPE RECORDERS

- Plural recorder system  
[NASA-CASE-XMS-06949] c 09 N69-21467
- Endless tape transport mechanism Patent  
[NASA-CASE-XGS-01223] c 07 N71-10609
- Low friction magnetic recording tape Patent  
[NASA-CASE-XGS-00373] c 23 N71-15978
- Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c 08 N71-19420
- Synchronous servo loop control system Patent  
[NASA-CASE-XNP-03744] c 10 N71-20448
- Incremental tape recorder and data rate converter Patent  
[NASA-CASE-XNP-02778] c 08 N71-22710
- Digital telemetry system Patent  
[NASA-CASE-XGS-01812] c 07 N71-23001
- Tape recorder Patent  
[NASA-CASE-XGS-08259] c 14 N71-23698
- Transient video signal recording with expanded playback Patent  
[NASA-CASE-ARC-10003-1] c 09 N71-25866
- A dc servosystem including an ac motor Patent  
[NASA-CASE-NPO-10700] c 07 N71-33613
- Recorder using selective noise filter  
[NASA-CASE-ERC-10112] c 07 N72-21119
- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-1] c 07 N73-22076
- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c 35 N76-16391
- Method of and means for testing a tape record/playback system  
[NASA-CASE-MFS-22671-2] c 35 N77-17426

## TAPERED COLUMNS

- Method of making a rocket motor casing Patent  
[NASA-CASE-XLE-00409] c 28 N71-15658
- Rocket motor casing Patent  
[NASA-CASE-XLE-05689] c 28 N71-15659

## TAPERING

- Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 33 N82-24426

## TARGET ACQUISITION

- Acquisition and tracking system for optical radar  
[NASA-CASE-MFS-20125] c 16 N72-13437
- Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c 10 N72-22235
- Intruder detection system  
[NASA-CASE-ARC-10097-2] c 07 N73-25160
- Optical signature generating and correlating apparatus  
[NASA-CASE-NPO-15226-1] c 74 N81-19899

## TARGET RECOGNITION

- Electronic background suppression method and apparatus for a field scanning sensor  
[NASA-CASE-XGS-05211] c 07 N69-39980

## TARGET SIMULATORS

- Simulator method and apparatus for practicing the mating of an observer-controlled object with a target  
[NASA-CASE-MFS-23052-2] c 74 N79-13855
- Synthetic aperture radar target simulator  
[NASA-CASE-NPO-15024-1] c 32 N82-10286

## TARGETS

- Method and apparatus for producing concentric hollow spheres — inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319

## TEETH

- Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862

## TEFLON (TRADEMARK)

- Bonding of reinforced Teflon to metals  
[NASA-CASE-MFS-20482] c 15 N72-22492

- Method of producing a storage bulb for an atomic hydrogen maser  
[NASA-CASE-NPO-13050-1] c 36 N75-15029
- Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27664

## TELECOMMUNICATION

- Adaptive compression of communication signals Patent  
[NASA-CASE-XLA-03076] c 07 N71-11266
- Means for generating a sync signal in an FM communication system Patent  
[NASA-CASE-XNP-10830] c 07 N71-11281
- Signal-to-noise ratio estimating by taking ratio of mean and standard deviation of integrated signal samples Patent  
[NASA-CASE-XNP-05254] c 07 N71-20791
- Digital synchronizer Patent  
[NASA-CASE-NPO-10851] c 07 N71-24613
- Minimal logic block encoder Patent  
[NASA-CASE-NPO-10595] c 10 N71-25917
- Two carrier communication system with single transmitter  
[NASA-CASE-NPO-11548] c 07 N73-26118
- Pseudonoise (PN) synchronization of data system with derivation of clock frequency from received signal for clocking receiver PN generator  
[NASA-CASE-XNP-03623] c 09 N73-28084
- Coherent receiver employing nonlinear coherence detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c 32 N74-30523
- Pseudo-noise test set for communication system evaluation — test signals  
[NASA-CASE-MFS-22671-1] c 35 N75-21582
- Modulator for tone and binary signals — phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981
- Method and apparatus for quadrature-shift-key and linear phase modulation  
[NASA-CASE-NPO-14444-1] c 33 N81-15192
- Random digital encryption secure communication system  
[NASA-CASE-MSC-16462-1] c 32 N82-31583

## TELEMETRY

- Pressure variable capacitor  
[NASA-CASE-XNP-09752] c 14 N69-21541
- Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333
- Position location and data collection system and method Patent  
[NASA-CASE-GSC-10083-1] c 30 N71-16090
- Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699
- Digitally controlled frequency synthesizer Patent  
[NASA-CASE-XGS-02317] c 09 N71-23525
- Programmable telemetry system Patent  
[NASA-CASE-GSC-10131-1] c 07 N71-24624
- Temperature telemetric transmitter Patent  
[NASA-CASE-NPO-10649] c 07 N71-24840
- Rapid sync acquisition system Patent  
[NASA-CASE-NPO-10214] c 10 N71-26577
- Telemetry actuated switch  
[NASA-CASE-ARC-10105] c 09 N72-17153
- Flexible computer accessed telemetry  
[NASA-CASE-NPO-11358] c 07 N72-25172
- Digital control and information system  
[NASA-CASE-NPO-11016] c 08 N72-31226
- Multichannel telemetry system  
[NASA-CASE-NPO-11572] c 07 N73-16121
- Receiver with an improved phase lock loop in a multichannel telemetry system with suppressed carrier  
[NASA-CASE-NPO-11593-1] c 07 N73-28012
- Telemetry synchronizer  
[NASA-CASE-GSC-11868-1] c 17 N76-22245
- Memory-based parallel data output controller  
[NASA-CASE-GSC-12447-1] c 60 N80-21987

## TELEOPERATORS

- Cooperative multitaxis sensor for teleoperation of article manipulating apparatus  
[NASA-CASE-NPO-13386-1] c 54 N75-27758

## TELEPHONES

- Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310

## TELEPHONY

- Digital communication system  
[NASA-CASE-MSC-13912-1] c 32 N74-30524

## TELESCOPES

- Pneumatic mirror support system  
[NASA-CASE-XLA-03271] c 11 N69-24321
- Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c 14 N71-26627
- Rotable accurate reflector system for telescopes Patent  
[NASA-CASE-NPO-10468] c 23 N71-33229



Light direction sensor  
[NASA-CASE-NPO-11201] c 14 N72-27409  
Borescope with variable angle scope  
[NASA-CASE-MFS-15162] c 14 N72-32452  
Ritchey-Chretien Telescope  
[NASA-CASE-GSC-11487-1] c 14 N73-30393  
Servo-controlled intravital microscope system  
[NASA-CASE-NPO-13214-1] c 35 N75-25123  
Heat reflecting field stop  
[NASA-CASE-LAR-12443-1] c 74 N82-19030

## TELETYPEWRITER SYSTEMS

Video communication system and apparatus Patent  
[NASA-CASE-XNP-06611] c 07 N71-26102

## TELEVISION CAMERAS

Electrically-operated rotary shutter Patent  
[NASA-CASE-XNP-00637] c 14 N70-40273  
Digital television camera control system Patent  
[NASA-CASE-XNP-01472] c 14 N70-41807  
Solid state television camera system Patent  
[NASA-CASE-XMF-06092] c 07 N71-24612  
Color television system  
[NASA-CASE-MSC-12146-1] c 07 N72-17109  
TV fatigue crack monitoring system  
[NASA-CASE-LAR-11490-1] c 39 N78-16387  
Optical conversion method — for spacecraft television  
[NASA-CASE-MSC-12618-1] c 74 N78-17865  
Television camera video level control system — space shuttle orbiters  
[NASA-CASE-MSC-18578-1] c 74 N82-27121

## TELEVISION EQUIPMENT

Television signal scan rate conversion system Patent  
[NASA-CASE-XMS-07168] c 07 N71-11300  
Automatic closed circuit television arc guidance control Patent  
[NASA-CASE-MFS-13046] c 07 N71-19433  
Color television systems using a single gun color cathode ray tube Patent  
[NASA-CASE-ERC-10098] c 09 N71-23618  
Television multiplexing system  
[NASA-CASE-KSC-10654-1] c 07 N73-30115  
Rotating raster generator  
[NASA-CASE-FRC-10071-1] c 32 N74-20813  
Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c 71 N74-21014  
Spacecraft docking and alignment system — using television camera system  
[NASA-CASE-MSC-12559-1] c 18 N76-14186  
System for producing chroma signals  
[NASA-CASE-MSC-14683-1] c 74 N77-18893

## TELEVISION RECEIVERS

Narrow bandwidth video Patent  
[NASA-CASE-XMS-06740-1] c 07 N71-26579

## TELEVISION SYSTEMS

Method and means for an improved electron beam scanning system Patent  
[NASA-CASE-ERC-10552] c 09 N71-12539  
Burst synchronization detection system Patent  
[NASA-CASE-XMS-05605-1] c 10 N71-19468  
Narrow bandwidth video Patent  
[NASA-CASE-XMS-06740-1] c 07 N71-26579  
Stereoscopic television system and apparatus  
[NASA-CASE-ARC-10160-1] c 23 N72-27728

## TELEVISION TRANSMISSION

Television simulation for aircraft and space flight Patent  
[NASA-CASE-XFR-03107] c 09 N71-19449  
Automatic frequency control for FM transmitter  
[NASA-CASE-MFS-21540-1] c 32 N74-19790  
Television noise reduction device  
[NASA-CASE-MSC-12607-1] c 32 N75-21485

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Targets for producing high purity I-123  
[NASA-CASE-LEW-10518-3] c 25 N78-27226

## TEMPERATURE

Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098

## TEMPERATURE COMPENSATION

Temperature compensated solid state differential amplifier Patent  
[NASA-CASE-XAC-00435] c 09 N70-35440  
Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00458] c 09 N70-38604  
Matched thermistors for microwave power meters Patent  
[NASA-CASE-NPO-10348] c 10 N71-12554  
Precision thrust gage Patent  
[NASA-CASE-XGS-02319] c 14 N71-22965  
Variable frequency oscillator with temperature compensation Patent  
[NASA-CASE-XNP-03916] c 09 N71-28810  
Omnidirectional acceleration device Patent  
[NASA-CASE-HQN-10780] c 14 N71-30265  
Thermal compensating structural member  
[NASA-CASE-MFS-20433] c 15 N72-28496

Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10467-1] c 09 N73-14214  
Opto-mechanical subsystem with temperature compensation through isothermal design  
[NASA-CASE-GSC-12059-1] c 35 N77-27366  
Temperature compensated current source  
[NASA-CASE-MSC-11235] c 33 N78-17294

## TEMPERATURE CONTROL

Method and apparatus for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c 16 N69-31343  
Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979  
Thermal control of space vehicles Patent  
[NASA-CASE-XLA-01291] c 33 N70-36617  
Thermal switch Patent  
[NASA-CASE-XNP-00463] c 33 N70-36847  
Sandwich panel construction Patent  
[NASA-CASE-XLA-00349] c 33 N70-37979  
Device for suppressing sound and heat produced by high-velocity exhaust jets Patent  
[NASA-CASE-XMF-01813] c 28 N70-41582  
Solar cell including second surface mirrors Patent  
[NASA-CASE-NPO-10109] c 03 N71-11049  
Excessive temperature warning system Patent  
[NASA-CASE-XLA-01926] c 14 N71-15620  
Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906  
Method and apparatus for controllably heating fluid Patent  
[NASA-CASE-XMF-04237] c 33 N71-16278  
Mount for thermal control system Patent  
[NASA-CASE-NPO-10138] c 33 N71-16357  
Transmission line thermal short Patent  
[NASA-CASE-XNP-09775] c 09 N71-20445  
Thermal control wall panel Patent  
[NASA-CASE-XLA-01243] c 33 N71-22792  
Thermal control panel Patent  
[NASA-CASE-XLA-07728] c 33 N71-22890  
Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c 33 N71-24876  
Temperature regulation circuit Patent  
[NASA-CASE-XNP-02792] c 14 N71-28958  
Automatic control of liquid cooling garment by cutaneous and external auditory meatus temperatures  
[NASA-CASE-MSC-13917-1] c 05 N72-15098  
Method for controlling vapor content of a gas  
[NASA-CASE-NPO-10633] c 03 N72-28025  
Atomic hydrogen maser with bulb temperature control to remove wall shift in maser output frequency  
[NASA-CASE-HQN-10654-1] c 16 N73-13489  
Pump for delivering heated fluids  
[NASA-CASE-NPO-11417] c 15 N73-24513  
Temperature controller for a fluid cooled garment  
[NASA-CASE-ARC-10599-1] c 05 N73-26071  
Temperature control system with a pulse width modulated bridge  
[NASA-CASE-NPO-11304] c 14 N73-26430  
Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829  
Apparatus for controlling the temperature of balloon-borne equipment  
[NASA-CASE-GSC-11620-1] c 34 N74-23039  
Self-regulating proportionally controlled heating apparatus and technique  
[NASA-CASE-GSC-11752-1] c 77 N75-20140  
Rocket chamber and method of making  
[NASA-CASE-LEW-11118-2] c 20 N76-14191  
Thermostatically controlled non-tracking type solar energy concentrator  
[NASA-CASE-NPO-13497-1] c 44 N76-14602  
Multi-chamber controllable heat pipe  
[NASA-CASE-ARC-10199] c 34 N78-17337  
Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029  
Low heat leak connector for cryogenic system  
[NASA-CASE-XLE-02367-1] c 31 N79-21225  
Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523  
Heating and cooling system — for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 39 N80-25693  
Pressure letdown method and device for coal conversion systems  
[NASA-CASE-NPO-15100-1] c 28 N81-33306  
Heat reflecting field stop  
[NASA-CASE-LAR-12443-1] c 74 N82-19030  
Automatic thermal switch  
[NASA-CASE-GSC-12415-1] c 33 N82-24419

Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N82-24449

## TEMPERATURE DISTRIBUTION

Heat shield oven  
[NASA-CASE-XMS-04318] c 15 N69-27871  
Apparatus for supplying conditioned air at a substantially constant temperature and humidity  
[NASA-CASE-GSC-12191-1] c 31 N80-32583

## TEMPERATURE EFFECTS

Variable stiffness polymers damper  
[NASA-CASE-XAC-11225] c 14 N69-27486  
Differential pressure cell Patent  
[NASA-CASE-XAC-00042] c 14 N70-34816  
Fluid flow control valve Patent  
[NASA-CASE-XLE-00703] c 15 N71-15967  
Temperature sensitive flow regulator Patent  
[NASA-CASE-MFS-14259] c 15 N71-19213  
Thermally cycled magnetometer Patent  
[NASA-CASE-XAC-03740] c 14 N71-26135  
Radiometric temperature reference Patent  
[NASA-CASE-MSC-13276-1] c 14 N71-27058

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Differential temperature transducer Patent  
[NASA-CASE-XAC-00812] c 14 N71-15598  
Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10467-1] c 09 N73-14214  
Method for compression molding of thermosetting plastics utilizing a temperature gradient across the plastic to cure the article  
[NASA-CASE-LAR-10489-1] c 31 N74-18124  
Method and apparatus for checking fire detectors  
[NASA-CASE-GSC-11600-1] c 35 N74-21019  
Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N81-19440

## TEMPERATURE MEASUREMENT

Motion picture camera for optical pyrometry Patent  
[NASA-CASE-XLA-00062] c 14 N70-33254  
Apparatus for measuring thermal conductivity Patent  
[NASA-CASE-XGS-01052] c 14 N71-15992  
Thermocouple assembly Patent  
[NASA-CASE-XNP-01659] c 14 N71-23039  
Cavity radiometer Patent  
[NASA-CASE-XNP-08961] c 14 N71-24809  
Sensing probe  
[NASA-CASE-LEW-10281-1] c 14 N72-17327  
Apparatus for sensing temperature  
[NASA-CASE-XLE-05230] c 14 N72-27410  
Method of making apparatus for sensing temperature  
[NASA-CASE-XLE-05230-2] c 14 N73-13417  
Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-1] c 14 N73-14428  
Method of fabricating an article with cavities — with thin bottom walls  
[NASA-CASE-LAR-10318-1] c 31 N74-18089  
Method for determining thermo-physical properties of specimens — photographic recording of changes in thin film phase-change temperature indicating material in wind tunnel  
[NASA-CASE-LAR-11053-1] c 25 N74-18551  
Wind sensor  
[NASA-CASE-NPO-13462-1] c 35 N76-24524  
Miniature ingestible telemeter devices to measure deep-body temperature  
[NASA-CASE-ARC-10583-1] c 52 N76-29894  
Thermocouple, multiple junction reference oven  
[NASA-CASE-FRC-10112-1] c 35 N81-26431  
Multi-channel temperature measurement amplification system — solar heating systems  
[NASA-CASE-MFS-23775-1] c 44 N82-16474  
Solar energy control system — temperature measurement  
[NASA-CASE-MFS-25287-1] c 44 N82-18686  
Method of an apparatus for measuring temperature and pressure — remote sensing of the atmosphere  
[NASA-CASE-GSC-12558-1] c 35 N82-29580

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Excessive temperature warning system Patent  
[NASA-CASE-XLA-01926] c 14 N71-15620  
Condition and condition duration indicator Patent  
[NASA-CASE-XMF-01097] c 10 N71-16058  
Thermal detector of electromagnetic energy by means of a vibrating electrode Patent  
[NASA-CASE-XAC-10768] c 09 N71-18830  
Method and means for providing an absolute power measurement capability Patent  
[NASA-CASE-ERC-11020] c 14 N71-26774  
High intensity radiant energy pulse source having means for opening shutter when light flux has reached a desired level  
[NASA-CASE-ARC-10178-1] c 09 N72-17152  
Thermocouple tape  
[NASA-CASE-LEW-11072-1] c 14 N73-24472



Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c 35 N77-32454

**TEMPERATURE PROBES**  
Temperature-compensating means for cavity resonator of amplifier Patent  
[NASA-CASE-XNP-00449] c 14 N70-35220

Sensing probe  
[NASA-CASE-LEW-10281-1] c 14 N72-17327

**TEMPERATURE PROFILES**  
Exothermic furnace module  
[NASA-CASE-MFS-25707-1] c 35 N82-26631

**TEMPERATURE SENSORS**  
Compensating radiometer  
[NASA-CASE-XLA-04556] c 14 N69-27484

Thermobulb mount Patent  
[NASA-CASE-NPO-10158] c 33 N71-16356

Mount for thermal control system Patent  
[NASA-CASE-NPO-10138] c 33 N71-16357

Heat flux measuring system Patent  
[NASA-CASE-XFR-03802] c 33 N71-23085

Temperature telemetric transmitter Patent  
[NASA-CASE-NPO-10649] c 07 N71-24840

Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475

Thin film capacitive bolometer and temperature sensor Patent  
[NASA-CASE-NPO-10607] c 09 N71-27232

Thin film temperature sensor and method of making same  
[NASA-CASE-NPO-11775] c 26 N72-28761

Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-2] c 35 N75-25122

Optical crystal temperature gauge with fiber optic connections  
[NASA-CASE-MSC-18627-1] c 74 N82-30071

**TEMPLATES**  
Microcircuit negative cutter  
[NASA-CASE-XLA-09843] c 15 N72-27485

**TENSILE STRENGTH**  
Method of making fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-00231] c 17 N70-38198

Reinforced metallic composites Patent  
[NASA-CASE-XLE-00228] c 17 N70-38490

Apparatus for tensile testing Patent  
[NASA-CASE-XKS-06250] c 14 N71-15600

Method for fiberizing ceramic materials Patent  
[NASA-CASE-XNP-00597] c 18 N71-23088

Tensile strength testing device Patent  
[NASA-CASE-XNP-05634] c 15 N71-24834

Device for use in loading tension members --- characterized by elongated elastic body  
[NASA-CASE-MFS-21488-1] c 14 N75-24794

Method of carbonizing polyacrylonitrile fibers and resulting product  
[NASA-CASE-ARC-11261-1] c 24 N81-29164

Method and apparatus for strengthening boron fibers --- high temperature oxidation  
[NASA-CASE-LEW-13826-1] c 24 N82-26385

**TENSILE STRESS**  
Rocket nozzle test method Patent  
[NASA-CASE-NPO-10311] c 31 N71-15643

Device for measuring tensile forces  
[NASA-CASE-MFS-21728-1] c 35 N74-27865

Solid medium thermal engine  
[NASA-CASE-ARC-10461-1] c 44 N74-33379

**TENSILE TESTS**  
Apparatus for tensile testing Patent  
[NASA-CASE-XKS-06250] c 14 N71-15600

Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878

Tensile strength testing device Patent  
[NASA-CASE-XNP-05634] c 15 N71-24834

Apparatus for remote measurement of displacement of marks on a specimen undergoing a tensile test  
[NASA-CASE-NPO-10778] c 14 N72-11364

Anti-buckling fatigue test assembly --- for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c 09 N74-19528

Method and apparatus for tensile testing of metal foil  
[NASA-CASE-LAR-10208-1] c 35 N76-18400

Device for tensioning test specimens within an hermetically sealed chamber  
[NASA-CASE-MFS-23281-1] c 35 N77-22450

**TENSION**  
Meter for use in detecting tension in straps having predetermined elastic characteristics  
[NASA-CASE-MFS-22189-1] c 35 N75-19615

**TERMINAL GUIDANCE**  
Energy management system for glider type vehicle Patent  
[NASA-CASE-XFR-00756] c 02 N71-13421

Terminal guidance system --- for guiding aircraft into preselected altitude and/or heading at terminal point  
[NASA-CASE-FRC-10049-1] c 04 N74-13420

Terminal guidance sensor system  
[NASA-CASE-NPO-14521-1] c 54 N79-20746

Terminal guidance sensor system --- space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519

**TERRARY SYSTEMS**  
Nical ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505

**TERRAIN**  
Landing gear Patent  
[NASA-CASE-XMF-01174] c 02 N70-41589

**TERRAIN ANALYSIS**  
Surface roughness measuring system --- synthetic aperture radar measurements of ocean wave height and terrain peaks  
[NASA-CASE-NPO-13862-1] c 35 N79-10391

Method for observing the features characterizing the surface of a land mass  
[NASA-CASE-FRC-11013-1] c 43 N81-17499

**TEST CHAMBERS**  
Exposure system for animals Patent  
[NASA-CASE-XAC-05333] c 11 N71-22875

Multiple environment materials test chamber having a multiple port X-ray tube for irradiating a plurality of samples Patent  
[NASA-CASE-XMS-02930] c 11 N71-23042

Flammability test chamber Patent  
[NASA-CASE-KSC-10126] c 11 N71-24985

Pressure seal Patent  
[NASA-CASE-NPO-10796] c 15 N71-27068

Autoignition test cell Patent  
[NASA-CASE-KSC-10198] c 11 N71-28629

Office gross leak tester Patent  
[NASA-CASE-ERC-10150] c 14 N71-28992

Method for measuring biaxial stress in a body subjected to stress inducing loads  
[NASA-CASE-MFS-23299-1] c 39 N77-28511

**TEST EQUIPMENT**  
Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391

Apparatus for tensile testing Patent  
[NASA-CASE-XKS-06250] c 14 N71-15600

Black-body furnace Patent  
[NASA-CASE-XLE-01399] c 33 N71-15625

Thermocouple assembly Patent  
[NASA-CASE-XNP-01659] c 14 N71-23039

Automatic fatigue test temperature programmer Patent  
[NASA-CASE-XLA-02059] c 33 N71-24276

Pulse rise time and amplitude detector Patent  
[NASA-CASE-XMF-08804] c 09 N71-24717

Resilience testing device Patent  
[NASA-CASE-XLA-08254] c 14 N71-26161

Validation device for spacecraft checkout equipment Patent  
[NASA-CASE-XKS-10543] c 07 N71-26292

Apparatus for testing wiring harness by vibration generating means  
[NASA-CASE-MSC-15158-1] c 14 N72-17325

Atmospheric sampling devices  
[NASA-CASE-NPO-11373] c 13 N72-25323

Burn rate testing apparatus  
[NASA-CASE-XMS-09690] c 33 N72-25913

Linear explosive comparison  
[NASA-CASE-LAR-10800-1] c 33 N72-27959

Apparatus for vibrational testing of articles  
[NASA-CASE-GSC-11302-1] c 14 N73-13416

Test stand system for vacuum chambers  
[NASA-CASE-MFS-21362] c 11 N73-20267

Rocket borne instrument to measure electric fields inside electrified clouds  
[NASA-CASE-KSC-10730-1] c 14 N73-32318

Compression test assembly  
[NASA-CASE-LAR-10440-1] c 14 N73-32323

Wind tunnel model and method  
[NASA-CASE-LAR-10812-1] c 09 N74-17955

Anti-buckling fatigue test assembly --- for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c 09 N74-19528

Method and apparatus for checking fire detectors  
[NASA-CASE-GSC-11600-1] c 35 N74-21019

Battery testing device --- for testing cells of multiple-cell battery  
[NASA-CASE-MFS-20761-1] c 44 N74-27519

Signal conditioner test set  
[NASA-CASE-KSC-10750-1] c 35 N75-12270

Particulate and aerosol detector  
[NASA-CASE-LAR-11434-1] c 35 N76-22509

High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523

Method of and means for testing a tape record/playback system  
[NASA-CASE-MFS-22671-2] c 35 N77-17426

Method of and means for testing a glancing-incidence mirror system of an X-ray telescope  
[NASA-CASE-MFS-22409-2] c 74 N78-15880

**TEST FACILITIES**  
Electric propulsion engine test chamber Patent  
[NASA-CASE-XLE-00252] c 11 N70-34844

High temperature testing apparatus Patent  
[NASA-CASE-XLE-00335] c 14 N70-35368

Gas analyzer for bi-gaseous mixtures Patent  
[NASA-CASE-XLA-01131] c 14 N71-10774

Model launcher for wind tunnels Patent  
[NASA-CASE-XNP-03578] c 11 N71-23030

Shock tube bypass piston tunnel  
[NASA-CASE-NPO-12109] c 11 N72-22245

**TEST STANDS**  
Automatic balancing device Patent  
[NASA-CASE-LAR-10774] c 10 N71-13545

Micro-pound extended range thrust stand Patent  
[NASA-CASE-GSC-10710-1] c 28 N71-27094

**TETHERED SATELLITES**  
Tetherline system for orbiting satellites  
[NASA-CASE-MFS-23564-1] c 15 N78-25119

**TETHERING**  
Cable arrangement for rigid tethering Patent  
[NASA-CASE-XLA-02332] c 32 N71-17609

Inflatable tether Patent  
[NASA-CASE-XMS-10993] c 15 N71-28936

**TETHERLINES**  
Flexible/rigidifiable cable assembly  
[NASA-CASE-MSC-13512-1] c 15 N72-22485

Tetherline system for orbiting satellites  
[NASA-CASE-MFS-23564-1] c 15 N78-25119

**TETRAETHYL ORTHOSILICATE**  
Thermal protection system  
[NASA-CASE-MSC-18796-1] c 24 N82-26389

**TETRAPHENYLS**  
Metal containing polymers from cyclic tetrameric phenylphosphonitriamides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363

**TEXTILES**  
Non-flammable elastomeric fiber from a fluorinated elastomer and containing an halogenated flame retardant  
[NASA-CASE-MSC-14331-1] c 27 N76-24405

**TEXTURES**  
Modification of the electrical and optical properties of polymers --- ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437

Texturing polymer surfaces by transfer casting --- cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440

Surface texturing of fluoropolymers  
[NASA-CASE-LEW-13028-1] c 27 N82-33521

**THERAPY**  
Hyperthermia heating apparatus --- cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996

**THERMAL ABSORPTION**  
Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051

Solar pond  
[NASA-CASE-NPO-13581-2] c 44 N78-31525

**THERMAL COMFORT**  
Thermal garment  
[NASA-CASE-XMS-03694-1] c 54 N82-29002

**THERMAL CONDUCTIVITY**  
Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c 14 N70-34156

Apparatus for measuring thermal conductivity Patent  
[NASA-CASE-XGS-01052] c 14 N71-15992

Heated element fluid flow sensor Patent  
[NASA-CASE-MSC-12084-1] c 12 N71-17569

Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c 33 N71-24876

Thermally conductive polymers  
[NASA-CASE-GSC-11304-1] c 06 N72-21105

Electrostatically controlled heat shutter  
[NASA-CASE-NPO-11942-1] c 33 N73-32818

Thermal barrier coating system  
[NASA-CASE-LEW-12554-1] c 34 N78-18355

Automatic thermal switch  
[NASA-CASE-GSC-12553-1] c 33 N80-21671

Support assembly for cryogenically coolable low-noise choke waveguide  
[NASA-CASE-NPO-14253-1] c 32 N80-32605

**THERMAL CONDUCTORS**  
Thermal conductive connection and method of making same Patent  
[NASA-CASE-XMS-02087] c 09 N70-41717

Solar energy absorber  
[NASA-CASE-MFS-22743-1] c 44 N76-22657



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- Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047
- Stabilized zinc oxide coating compositions Patent  
[NASA-CASE-XMF-07770-2] c 18 N71-26772
- Inorganic thermal control coatings  
[NASA-CASE-MFS-20011] c 18 N72-22566
- Polymers vehicles as carriers for sulfonic acid salt of nitrosubstituted aromatic amines  
[NASA-CASE-ARC-10325] c 06 N72-25147
- Refractory porcelain enamel passive control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c 27 N75-27160
- Particulate and solar radiation stable coating for spacecraft  
[NASA-CASE-LAR-10805-2] c 34 N77-18382
- Method of preparing zinc orthotitanate pigment  
[NASA-CASE-MFS-23345-1] c 27 N77-30237
- Intumescent coatings containing 4,4'-dinitrosulfanilide  
[NASA-CASE-ARC-11042-1] c 24 N78-14096
- Thermal barrier coating system  
[NASA-CASE-LEW-12554-1] c 34 N78-18355
- High temperature resistant cermet and ceramic compositions --- for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302
- Intumescent-ablative coatings using endothermic fillers  
[NASA-CASE-ARC-11043-1] c 24 N78-27180
- Lightweight electrically-powered flexible thermal laminate --- made of metal and nonconductive yarns  
[NASA-CASE-MSC-12662-1] c 33 N79-12331
- Electrically conductive thermal control coatings  
[NASA-CASE-GSC-12207-1] c 24 N79-14156
- High temperature glass thermal control structure and coating  
[NASA-CASE-ARC-11164-1] c 27 N82-10228
- Improved thermal barrier coating system  
[NASA-CASE-LEW-13324-1] c 26 N82-26431
- High temperature emittance coatings and coating compositions --- repairing damaged space shuttle tiles in space  
[NASA-CASE-MSC-18851-1] c 27 N82-26460
- Variable anodic thermal control coating  
[NASA-CASE-LAR-12719-1] c 26 N82-31508
- THERMAL CYCLING TESTS**  
Reusable thermal cycling clamp --- holders for directional solidification experiments  
[NASA-CASE-LAR-12868-1] c 27 N82-18390
- THERMAL DEGRADATION**  
Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146
- Electrical apparatus for detection of thermal decomposition of insulation Patent  
[NASA-CASE-XMF-03968] c 14 N71-27186
- THERMAL DIFFUSIVITY**  
Double-beam optical method and apparatus for measuring thermal diffusivity and other molecular dynamic processes in utilizing the transient thermal lens effect  
[NASA-CASE-NPO-14657-1] c 74 N81-17887
- THERMAL EMISSION**  
Electromagnetic radiation energy arrangement --- coatings for solar energy absorption and infrared reflection  
[NASA-CASE-WOO-00428-1] c 32 N79-19186
- THERMAL ENERGY**  
Energy conversion apparatus Patent  
[NASA-CASE-XLE-00212] c 03 N70-34134
- Device for directionally controlling electromagnetic radiation Patent  
[NASA-CASE-XLE-01716] c 09 N70-40234
- Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-26155
- Gas core nuclear reactor Patent  
[NASA-CASE-LEW-10250-1] c 22 N71-28759
- Electrostatically controlled heat shutter  
[NASA-CASE-NPO-11942-1] c 33 N73-32818
- Solid medium thermal engine  
[NASA-CASE-ARC-10461-1] c 44 N74-33379
- Panel for selectively absorbing solar thermal energy and the method of producing said panel  
[NASA-CASE-MFS-22562-1] c 44 N76-14595
- Thermal energy storage system --- operating on superheating of liquids  
[NASA-CASE-MFS-23167-1] c 44 N76-31667
- Low to high temperature energy conversion system  
[NASA-CASE-NPO-13510-1] c 44 N77-32581
- Thermal energy transformer  
[NASA-CASE-NPO-14058-1] c 44 N79-18443
- THERMAL EXPANSION**  
Thermally operated valve Patent  
[NASA-CASE-XLE-00815] c 15 N70-35407
- Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123
- Thermal motor  
[NASA-CASE-NPO-11283] c 09 N72-25260

- Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063
- THERMAL FATIGUE**  
Automatic fatigue test temperature programmer Patent  
[NASA-CASE-XLA-02059] c 33 N71-24276
- THERMAL INSULATION**  
Piping arrangement through a double chamber structure  
[NASA-CASE-XNP-08882] c 15 N69-39935
- Insulating structure Patent  
[NASA-CASE-XMF-00341] c 15 N70-33323
- Unfired-ceramic flame-resistant insulation and method of making the same Patent  
[NASA-CASE-XMF-01030] c 18 N70-41583
- Techniques for insulating cryogenic fuel containers Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015
- Lightweight refractory insulation and method of preparing the same Patent  
[NASA-CASE-XMF-05279] c 18 N71-16124
- Heat protection apparatus Patent  
[NASA-CASE-XLA-00892] c 33 N71-17897
- Cryogenic insulation system Patent  
[NASA-CASE-XLE-04222] c 23 N71-22881
- Insulation system Patent  
[NASA-CASE-XLE-02647] c 18 N71-23658
- Filament wound container Patent  
[NASA-CASE-XLE-03803] c 15 N71-23816
- Panelized high performance multilayer insulation Patent  
[NASA-CASE-MFS-14023] c 33 N71-25351
- Isothermal cover with thermal reservoirs Patent  
[NASA-CASE-MFS-20355] c 33 N71-25353
- Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MSC-12109] c 18 N71-26285
- Thickness measuring and injection device Patent  
[NASA-CASE-MFS-20261] c 14 N71-27005
- Cryogenic thermal insulation Patent  
[NASA-CASE-XMF-05046] c 33 N71-28892
- Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572
- Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829
- Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c 35 N74-15093
- Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037
- High current electrical lead --- for thermionic converters  
[NASA-CASE-LEW-10950-1] c 33 N74-27683
- Structural heat pipe --- for spacecraft wall thermal insulation system  
[NASA-CASE-GSC-11619-1] c 34 N75-12222
- Strain arrestor plate for fused silica tile --- bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264
- Auger attachment method for insulation --- of spacecraft  
[NASA-CASE-MSC-12615-1] c 37 N76-19437
- Flexible pile thermal barrier insulator  
[NASA-CASE-MSC-19568-1] c 34 N78-25350
- Thermal insulation attaching means --- adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221
- Diced tile thermal protection for spacecraft  
[NASA-CASE-MSC-16366-1] c 24 N79-23142
- Fibrous refractory composite insulation --- shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062
- Thermal insulation protection means  
[NASA-CASE-MSC-12737-1] c 24 N79-25142
- Installing fiber insulation  
[NASA-CASE-MSC-16973-1] c 37 N81-14317
- Process for the preparation of polycarbonylphosphazenes --- thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271
- High temperature glass thermal control structure and coating  
[NASA-CASE-ARC-11164-1] c 27 N82-10228
- Carbonylcyclotriphosphazenes and their polymers --- thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389
- A method and technique for installing light-weight fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-18934-3] c 24 N82-26387
- Thermal garment  
[NASA-CASE-XMS-03694-1] c 54 N82-29002
- THERMAL PLASMAS**  
Continuous plasma light source  
[NASA-CASE-XNP-04167-2] c 25 N72-24753

## THERMAL PROTECTION

- Thermo-protective device for balances Patent  
[NASA-CASE-XAC-00648] c 14 N70-40400
- Ablation structures Patent  
[NASA-CASE-XMS-01816] c 33 N71-15623
- Spacecraft radiator cover Patent  
[NASA-CASE-MSC-12049] c 31 N71-16080
- Foamed in place ceramic refractory insulating material Patent  
[NASA-CASE-XGS-02435] c 18 N71-22998
- Ceramic insulation for radiant heating environments and method of preparing the same Patent  
[NASA-CASE-MFS-14253] c 33 N71-24858
- Solid state thermal control polymer coating Patent  
[NASA-CASE-XLA-01745] c 33 N71-28903
- Temperature reducing coating for metals subject to flame exposure Patent  
[NASA-CASE-XLE-00035] c 33 N71-29151
- Stand-off type ablative heat shield  
[NASA-CASE-MSC-12143-1] c 33 N72-17947
- Flexible fire retardant foam  
[NASA-CASE-ARC-10180-1] c 28 N72-20767
- Flexible fire retardant polyisocyanate modified neoprene foam --- for thermal protective devices  
[NASA-CASE-ARC-10180-1] c 27 N74-12814
- Adjustable securing base  
[NASA-CASE-MSC-19666-1] c 37 N78-17383
- Reaction cured glass and glass coatings  
[NASA-CASE-ARC-11051-1] c 27 N78-32260
- Diced tile thermal protection for spacecraft  
[NASA-CASE-MSC-16366-1] c 24 N79-23142
- Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-13359-1] c 27 N81-24265
- Corrosion resistant thermal barrier coating --- protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188
- Thermal control coatings based on trialkoxysilane hydrolysate binders --- tolerance to ultraviolet radiation in vacuum  
[NASA-CASE-MFS-25620-1] c 24 N82-11118
- Covering solid, film cooled surfaces with a duplex thermal barrier coating  
[NASA-CASE-LEW-13450-1] c 34 N82-25463
- High temperature silicon carbide impregnated insulating fabrics --- filling the gaps between space shuttle tiles  
[NASA-CASE-MSC-18832-1] c 24 N82-26388
- Thermal protection system  
[NASA-CASE-MSC-18796-1] c 24 N82-26389
- Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N82-26640
- Attachment system for silica tiles --- thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456
- Multilayer thermal protection system  
[NASA-CASE-LAR-12620-1] c 24 N82-32417
- THERMAL RADIATION**  
Compensating radiometer  
[NASA-CASE-XLA-04556] c 14 N69-27484
- Temperature sensitive capacitor device  
[NASA-CASE-XNP-09750] c 14 N69-39937
- High temperature heat source Patent  
[NASA-CASE-XLE-00490] c 33 N70-34545
- Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145
- Cavity radiometer Patent  
[NASA-CASE-XNP-08961] c 14 N71-24809
- Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852
- THERMAL REACTORS**  
Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c 73 N78-19920
- THERMAL RESISTANCE**  
Diode and protection fuse unit Patent  
[NASA-CASE-XKS-03381] c 09 N71-22796
- Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812
- Dual measurement ablation sensor  
[NASA-CASE-LAR-10105-1] c 34 N74-15652
- Self-regulating proportionally controlled heating apparatus and technique  
[NASA-CASE-GSC-11752-1] c 77 N75-20140
- Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-1] c 27 N78-32256
- Ambient cure polyimide foams --- thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215
- The 1,2,4-oxadiazole elastomers --- heat resistant polymers  
[NASA-CASE-ARC-11253-1] c 27 N81-17262
- High stability amplifier  
[NASA-CASE-GSC-12646-1] c 33 N81-32391



- Surface conforming thermal/pressure seal --- tail assemblies of space shuttle orbiters  
[NASA-CASE-MS-C-18422-1] c 37 N82-16408
- Reusable thermal cycling clamp --- holders for directional solidification experiments  
[NASA-CASE-LAR-12868-1] c 27 N82-18390
- Heat resistant protective hand covering  
[NASA-CASE-MS-C-20261-1] c 54 N82-32985
- Heat resistant protective hand covering  
[NASA-CASE-MS-C-20261-2] c 54 N82-32986
- THERMAL SHOCK**  
Thermal shock apparatus Patent  
[NASA-CASE-XLE-02024] c 14 N71-22964
- Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584
- Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206
- Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 27 N81-22190
- THERMAL SIMULATION**  
Thermopile vacuum gage tube simulator Patent  
[NASA-CASE-XLA-02758] c 14 N71-18481
- THERMAL STABILITY**  
Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400
- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203
- Metal containing polymers from cyclic tetrameric phenylphosphonitriamides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363
- Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N76-32315
- Sound-suppressing structure with thermal relief  
[NASA-CASE-LEW-12658-1] c 71 N79-14871
- Infusible silazane polymer and process for producing same --- protective coatings  
[NASA-CASE-XMF-02526-1] c 27 N79-21190
- Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307
- Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12840-1] c 27 N82-11206
- THERMAL STRESSES**  
Strain gage Patent Application  
[NASA-CASE-FRC-10053] c 14 N70-35587
- Multilegged support system Patent  
[NASA-CASE-XLA-01326] c 11 N71-21481
- Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c 32 N72-25877
- Apparatus and method for reducing thermal stress in a turbine rotor  
[NASA-CASE-LEW-12232-1] c 07 N79-10057
- Method for alleviating thermal stress damage in laminates --- metal matrix composites  
[NASA-CASE-LEW-12493-1] c 24 N81-17170
- Method for alleviating thermal stress damage in laminates  
[NASA-CASE-LEW-12493-2] c 24 N81-26179
- Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26674
- THERMIONIC CATHODES**  
Cavity emitter for thermionic converter Patent  
[NASA-CASE-NPO-10412] c 09 N71-28421
- THERMIONIC CONVERTERS**  
Tnode thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898
- Thermionic converter with current augmented by self induced magnetic field Patent  
[NASA-CASE-XLE-01903] c 22 N71-23599
- Cavity emitter for thermionic converter Patent  
[NASA-CASE-NPO-10412] c 09 N71-28421
- Solar cell Patent  
[NASA-CASE-ARC-10050] c 03 N71-33409
- Uninsulated in-core thermionic diode  
[NASA-CASE-NPO-10542] c 09 N72-27228
- High current electrical lead --- for thermionic converters  
[NASA-CASE-LEW-10950-1] c 33 N74-27683
- Electric power generation system directory for laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524
- Nuclear thermionic converter --- tungsten-thorium oxide rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891
- Cesium thermionic converters having improved electrodes  
[NASA-CASE-LEW-12038-3] c 44 N78-25555
- High thermal power density heat transfer --- thermionic converters  
[NASA-CASE-LEW-12950-1] c 34 N82-11399
- THERMIONIC DIODES**  
Heat pipe thermionic diode power system Patent  
[NASA-CASE-XMF-05843] c 03 N71-11055
- Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c 03 N71-12255
- Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent  
[NASA-CASE-XNP-00384] c 09 N71-13530
- Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114] c 33 N71-27862
- Uninsulated in-core thermionic diode  
[NASA-CASE-NPO-10542] c 09 N72-27228
- THERMIONIC EMITTERS**  
Thermionic tantalum emitter doped with oxygen Patent Application  
[NASA-CASE-NPO-11138] c 03 N70-34646
- THERMIONIC POWER GENERATION**  
Control for nuclear thermionic power source  
[NASA-CASE-NPO-13114-2] c 73 N78-28913
- Improved thermionic energy converters  
[NASA-CASE-LEW-12443-1] c 44 N81-19561
- THERMISTORS**  
Matched thermistors for microwave power meters Patent  
[NASA-CASE-NPO-10348] c 10 N71-12554
- Thermistor holder for skin temperature measurements  
[NASA-CASE-ARC-10855-1] c 52 N77-10780
- Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449
- Directional flow sensor  
[NASA-CASE-FRC-11074-1] c 35 N82-11436
- THERMOCHEMISTRY**  
Thermochemical generation of hydrogen  
[NASA-CASE-NPO-15015-1] c 25 N82-28368
- THERMOCHROMATIC MATERIALS**  
Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-1] c 14 N73-14428
- Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-2] c 35 N75-25122
- THERMOCOUPLE PYROMETERS**  
Dual measurement ablation sensor  
[NASA-CASE-LAR-10105-1] c 34 N74-15652
- THERMOCOUPLES**  
Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c 14 N69-27459
- Gas cooled high temperature thermocouple Patent  
[NASA-CASE-XLE-09475-1] c 33 N71-15568
- Weld control system using thermocouple wire Patent  
[NASA-CASE-MFS-06074] c 15 N71-20393
- Heat sensing instrument Patent  
[NASA-CASE-XLA-01551] c 14 N71-22989
- Thermocouple assembly Patent  
[NASA-CASE-XNP-01659] c 14 N71-23039
- Fluid phase analyzer Patent  
[NASA-CASE-NPO-10691] c 14 N71-26199
- Apparatus for sensing temperature  
[NASA-CASE-XLE-05230] c 14 N72-27410
- Method of making apparatus for sensing temperature  
[NASA-CASE-XLE-05230-2] c 14 N73-13417
- Butt welder for fine gauge tungsten/rhenium thermocouple wire  
[NASA-CASE-LAR-10103-1] c 15 N73-14468
- Thermocouple tape  
[NASA-CASE-LEW-11072-1] c 14 N73-24472
- Thermocouple tape --- developed from thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c 35 N76-15434
- Thermocouple installation  
[NASA-CASE-NPO-13540-1] c 35 N77-14409
- Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c 35 N77-32454
- Thermocouples of molybdenum and indium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12174-2] c 35 N79-14346
- Thermocouple, multiple junction reference oven  
[NASA-CASE-FRC-10112-1] c 35 N81-26431
- Solar energy control system --- temperature measurement  
[NASA-CASE-MFS-25287-1] c 44 N82-18686
- THERMODYNAMIC CYCLES**  
Solar engine  
[NASA-CASE-LAR-12148-1] c 44 N82-24640
- THERMODYNAMIC EFFICIENCY**  
Automatic compression adjusting mechanism for internal combustion engines  
[NASA-CASE-MS-C-18807-1] c 37 N81-29442
- THERMODYNAMIC PROPERTIES**  
Thermal shock apparatus Patent  
[NASA-CASE-XLE-02024] c 14 N71-22964
- Foamed in place ceramic refractory insulating material Patent  
[NASA-CASE-XGS-02435] c 18 N71-22998
- Superconducting magnet Patent  
[NASA-CASE-XNP-04503] c 23 N71-29049
- Cobalt-base alloy  
[NASA-CASE-LEW-10436-1] c 17 N73-32415
- THERMOELECTRIC GENERATORS**  
Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146
- Segmenting lead telluride-silicon germanium thermoelements Patent  
[NASA-CASE-XGS-05718] c 26 N71-16037
- Integrated thermoelectric generator/space antenna combination  
[NASA-CASE-XER-09521] c 09 N72-12136
- Thermally cascaded thermoelectric generator  
[NASA-CASE-NPO-10753] c 03 N72-26031
- THERMOELECTRIC MATERIALS**  
Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786
- Segmenting lead telluride-silicon germanium thermoelements Patent  
[NASA-CASE-XGS-05718] c 26 N71-16037
- THERMOELECTRIC POWER GENERATION**  
Two-fluid magnetohydrodynamic system and method for thermal-electric power conversion Patent  
[NASA-CASE-NXP-00644] c 03 N70-36803
- Combined electrolysis device and fuel cell and method of operation Patent  
[NASA-CASE-XLE-01645] c 03 N71-20904
- Thermoelectric power system --- for spacecraft  
[NASA-CASE-MFS-22002-1] c 44 N76-16612
- THERMOELECTRICITY**  
Thermocouple tape  
[NASA-CASE-LEW-11072-1] c 14 N73-24472
- Apparatus and method for measuring the Seebeck coefficient and resistivity of materials  
[NASA-CASE-NPO-11749] c 14 N73-28486
- THERMOGRAVIMETRY**  
High performance filletting sealant  
[NASA-CASE-ARC-11409-1] c 27 N82-32490
- THERMOLUMINESCENCE**  
Method of detecting oxygen in a gas  
[NASA-CASE-LAR-10668-1] c 06 N73-16106
- Thermoluminescent aerosol analysis  
[NASA-CASE-LAR-12046-1] c 25 N78-15210
- THERMOMAGNETIC EFFECTS**  
Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c 36 N74-13205
- Thermomagnetic recording and magneto-optic playback system  
[NASA-CASE-NPO-10872-1] c 35 N79-16246
- THERMOMETERS**  
Platinum resistance thermometer circuit  
[NASA-CASE-MS-C-12327-1] c 35 N77-27368
- THERMOPHYSICAL PROPERTIES**  
Method for determining thermo-physical properties of specimens --- photographic recording of changes in thin film phase-change temperature indicating material in wind tunnel  
[NASA-CASE-LAR-11053-1] c 25 N74-18551
- Apparatus for determining thermophysical properties of test specimens  
[NASA-CASE-LAR-11883-1] c 09 N77-27131
- THERMOPILES**  
Differential temperature transducer Patent  
[NASA-CASE-XAC-00812] c 14 N71-15598
- Horizon sensor with a plurality of fixedly positioned radiation compensated radiation sensitive detectors Patent  
[NASA-CASE-XNP-06957] c 14 N71-21088
- Irradiance measuring device  
[NASA-CASE-NPO-11493] c 14 N73-12447
- THERMOPLASTIC FILMS**  
Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708
- THERMOPLASTIC RESINS**  
Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233
- Thermoplastic rubber comprising ethylene-vinyl acetate copolymer, asphalt and fluxing oil  
[NASA-CASE-NPO-08835-1] c 27 N78-33228
- Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076
- Thermoset-thermoplastic aromatic polyamides  
[NASA-CASE-LAR-12723-1] c 27 N81-15107
- Method of making formulated plastic separators for soluble electrode cells  
[NASA-CASE-LEW-12358-2] c 25 N82-21268



- Induction heating gun  
[NASA-CASE-LAR-12540-2] c 27 N82-24345  
Polyphenylquinoxalines containing pendant  
phenylethynyl and ethynyl groups — thermoplastic resins  
[NASA-CASE-LAR-12838-1] c 27 N82-26463  
One-step dual purpose joining technique  
[NASA-CASE-LAR-12595-1] c 33 N82-26571  
Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708

**THERMOPLASTICITY**

- Process for preparing thermoplastic aromatic  
polyimides  
[NASA-CASE-LAR-11828-1] c 27 N78-32261  
Heat sealable, flame and abrasion resistant coated fabric  
— clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238

**THERMOREGULATION**

- Garments for controlling the temperature of the body  
Patent  
[NASA-CASE-XMS-10269] c 05 N71-24147

**THERMOSETTING RESINS**

- Method for molding compounds Patent  
[NASA-CASE-XLA-01091] c 15 N71-10672  
Method and apparatus for bonding a plastics sleeve onto  
a metallic body Patent  
[NASA-CASE-XLA-01262] c 15 N71-21404  
Honeycomb panel and method of making same Patent  
[NASA-CASE-XMF-01402] c 18 N71-21651  
Method of forming shapes from planar sheets of  
thermosetting materials  
[NASA-CASE-NPO-11036] c 15 N72-24522  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-2] c 06 N72-27151  
Evacuated displacement compression molding  
[NASA-CASE-LAR-10782-1] c 31 N74-14133  
Method for compression molding of thermosetting  
plastics utilizing a temperature gradient across the plastic  
to cure the article  
[NASA-CASE-LAR-10489-1] c 31 N74-18124  
Evacuated, displacement compression mold — of  
tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c 31 N75-13111  
Cork-resin ablative insulation for complex surfaces and  
method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388  
Thermoset-thermoplastic aromatic polyamides  
[NASA-CASE-LAR-12723-1] c 27 N81-15107  
Polymeric compositions and their method of  
manufacture — forming filled polymer systems using  
cryogenics  
[NASA-CASE-NPO-10424-1] c 27 N81-24258

**THERMOSTATS**

- Thermal switch Patent  
[NASA-CASE-XNP-00463] c 33 N70-36847  
Thermostatic actuator  
[NASA-CASE-NPO-10637] c 15 N72-12409  
Thermostatically controlled non-tracking type solar  
energy concentrator  
[NASA-CASE-NPO-13497-1] c 44 N76-14602  
Automatic thermal switch  
[NASA-CASE-GSC-12553-1] c 33 N80-21671

**THICK FILMS**

- Screened circuit capacitors  
[NASA-CASE-LAR-10294-1] c 26 N72-28762

**THICKNESS**

- Myocardium wall thickness transducer and measuring  
method  
[NASA-CASE-NPO-13644-1] c 52 N76-29895  
Thickness measurement system  
[NASA-CASE-MFS-23721-1] c 31 N79-28370  
Strong thin membrane structure — solar sails  
[NASA-CASE-NPO-14021-2] c 27 N80-16163

**THIN FILMS**

- Temperature sensitive capacitor device  
[NASA-CASE-XNP-09750] c 14 N69-39937  
Means and methods of depositing thin films on  
substrates Patent  
[NASA-CASE-XNP-00595] c 15 N70-34967  
Method of forming thin window drifted silicon charged  
particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560  
Vacuum deposition apparatus Patent  
[NASA-CASE-XMF-01667] c 15 N71-17647  
GaAs solar detector using manganese as a doping agent  
Patent  
[NASA-CASE-XNP-01328] c 26 N71-18064  
Stable amplifier having a stable quiescent point  
Patent  
[NASA-CASE-XGS-02812] c 09 N71-19466  
Evaporant source for vapor deposition Patent  
[NASA-CASE-XMF-06065] c 15 N71-20395  
Method of electrolytically binding a layer of  
semiconductors together Patent  
[NASA-CASE-XNP-01959] c 26 N71-23043

Vacuum evaporator with electromagnetic ion steering

- Patent  
[NASA-CASE-NPO-10331] c 09 N71-26701  
Magnetic recording head and method of making same  
Patent  
[NASA-CASE-GSC-10097-1] c 08 N71-27210  
Thin film capacitive bolometer and temperature sensor  
Patent  
[NASA-CASE-NPO-10607] c 09 N71-27232  
Microelectronic module package Patent  
[NASA-CASE-XMS-02182] c 10 N71-28783  
Fabrication of single crystal film semiconductor  
devices  
[NASA-CASE-ERC-10222] c 09 N72-22199  
Active microwave inses and windows  
[NASA-CASE-LAR-10513-1] c 07 N72-25170  
Light regulator  
[NASA-CASE-XLA-10836-1] c 26 N72-27784  
Thin film microwave ins  
[NASA-CASE-LAR-10511-1] c 09 N72-29172  
Method of forming transparent films of ZnO  
[NASA-CASE-FRC-10019] c 15 N73-12487  
Light intensity strain analysis  
[NASA-CASE-LAR-10765-1] c 32 N73-20740  
Monitoring deposition of films  
[NASA-CASE-MFS-20675] c 26 N73-26751  
Holographic thin film analyzer  
[NASA-CASE-MFS-20823-1] c 16 N73-30476  
Transparent switchboard  
[NASA-CASE-MSC-13746-1] c 10 N73-32143  
Method for determining thermo-physical properties of  
specimens — photographic recording of changes in thin  
film phase-change temperature indicating material in wind  
tunnel  
[NASA-CASE-LAR-11053-1] c 25 N74-18551  
Method of preparing water purification membranes —  
polymerization of allyl amine as thin films in plasma  
discharge  
[NASA-CASE-ARC-10643-1] c 25 N75-12087  
System for depositing thin films  
[NASA-CASE-MFS-20775-1] c 31 N75-12161  
Method of producing a storage bulb for an atomic  
hydrogen maser  
[NASA-CASE-NPO-13050-1] c 36 N75-15029  
Integrated structure vacuum tube  
[NASA-CASE-ARC-10445-1] c 31 N76-31365  
Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436  
Strong thin membrane structure — solar sails  
[NASA-CASE-NPO-14021-2] c 27 N80-16163  
Method of forming dynamic membrane on stainless steel  
support  
[NASA-CASE-MSC-18172-1] c 26 N80-19237  
Partial interlaminar separation system for composites  
[NASA-CASE-LAR-12065-1] c 24 N81-14000  
Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 25 N82-26397  
Thin film strain transducer — for strain monitoring of  
high altitude balloons  
[NASA-CASE-WLP-10055-1] c 35 N82-26632
- THIN PLATES**  
Dichroic plate — as bandpass filters  
[NASA-CASE-NPO-13506-1] c 35 N76-15435  
Adjustable securing base  
[NASA-CASE-MSC-19666-1] c 37 N78-17383
- THIN WALLED SHELLS**  
Thin-walled pressure vessel Patent  
[NASA-CASE-XLE-04677] c 15 N71-10577
- THIN WALLS**  
Channel-type shell construction for rocket engines and  
the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860  
Sealed separable connection Patent  
[NASA-CASE-NPO-10064] c 15 N71-17693  
Low mass truss structure  
[NASA-CASE-LAR-10546-1] c 11 N72-25287  
Differential pressure control  
[NASA-CASE-MFS-14216] c 14 N73-13418  
Method of fabricating an article with cavities — with thin  
bottom walls  
[NASA-CASE-LAR-10318-1] c 31 N74-18089  
Method of fabricating an object with a thin wall having  
a precisely shaped slit  
[NASA-CASE-LAR-10409-1] c 31 N74-21059
- THORIUM FLUORIDES**  
Ultraviolet filter  
[NASA-CASE-XNP-02340] c 23 N69-24332
- THORIUM OXIDES**  
Nuclear thermionic converter — tungsten-thorium oxide  
rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891
- THREADS**  
Inspection gage for boss Patent  
[NASA-CASE-XMF-04966] c 14 N71-17658  
Threadless fastener apparatus Patent  
[NASA-CASE-XFR-05302] c 15 N71-23254

**THREE DIMENSIONAL MOTION**

- Solid state controller three axes controller  
[NASA-CASE-MSC-12394-1] c 08 N74-10942

**THRESHOLD GATES**

- Method and apparatus for data compression by a  
decreasing slope threshold test  
[NASA-CASE-NPO-10769] c 08 N72-11171  
Radiation hardening of MOS devices by boron — for  
stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c 76 N75-25730

**THRESHOLD LOGIC**

- SCR blocking pulse gate amplifier Patent  
[NASA-CASE-XLA-07497] c 09 N71-12514

**THROATS**

- Method of making a rocket nozzle  
[NASA-CASE-XMF-06884-1] c 20 N79-21123

**THRUST AUGMENTATION**

- Nozzle Patent  
[NASA-CASE-XLA-00154] c 28 N70-33374  
Construction and method of arranging a plurality of ion  
engines to form a cluster Patent  
[NASA-CASE-XNP-02923] c 28 N71-23081  
Reversed cowl flap inlet thrust augmentor — with  
adjustable airfoil  
[NASA-CASE-ARC-10754-1] c 07 N75-24736  
Method and apparatus for rapid thrust increases in a  
turbofan engine  
[NASA-CASE-LEW-12971-1] c 07 N80-18039  
Thrust augmented spin recovery device  
[NASA-CASE-LAR-11970-2] c 08 N81-19130

**THRUST BEARINGS**

- Thrust bearing  
[NASA-CASE-LEW-11949-1] c 37 N76-29588

**THRUST CHAMBER PRESSURE**

- Pitch attitude stabilization system utilizing engine  
pressure ratio feedback signals  
[NASA-CASE-LAR-12562-1] c 08 N81-26152

**THRUST CHAMBERS**

- Rocket chamber leak test fixture  
[NASA-CASE-XFR-09479] c 14 N69-27503  
Supporting and protecting device Patent  
[NASA-CASE-XMF-00580] c 11 N70-35383  
Rocket thrust chamber Patent  
[NASA-CASE-XLE-00145] c 28 N70-36806  
Method of making a rocket motor casing Patent  
[NASA-CASE-XLE-00409] c 28 N71-15658  
Rocket motor casing Patent  
[NASA-CASE-XLE-05689] c 28 N71-15659  
Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736  
Injection head for delivering liquid fuel and oxidizers  
[NASA-CASE-NPO-10046] c 28 N72-17843  
Fluidic proportional thruster system  
[NASA-CASE-ARC-10106-1] c 28 N72-22769  
Ion thruster  
[NASA-CASE-LEW-10770-1] c 28 N72-22770  
Thermal flux transfer system  
[NASA-CASE-NPO-12070-1] c 28 N73-32606  
Heat exchanger — rocket combustion chambers and  
cooling systems  
[NASA-CASE-LEW-12252-1] c 34 N79-13288  
Heat exchanger and method of making — bonding rocket  
chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N79-13289

**THRUST CONTROL**

- Electromechanical actuator  
[NASA-CASE-XNP-05975] c 15 N69-23185  
Apparatus and method for control of a solid fueled rocket  
vehicle Patent  
[NASA-CASE-XNP-00217] c 28 N70-38181  
Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629  
Continuous detonation reaction engine Patent  
[NASA-CASE-XMF-06926] c 28 N71-22983  
High efficiency ionizer assembly Patent  
[NASA-CASE-XNP-01954] c 28 N71-28850  
Heated porous plug microthruster  
[NASA-CASE-GSC-10640-1] c 28 N72-18766  
Multi-purpose wind tunnel reaction control model  
block  
[NASA-CASE-MSC-19706-1] c 09 N78-31129  
Fluid thrust control system — for liquid propellant rocket  
engines  
[NASA-CASE-XMF-05964-1] c 20 N79-21124

**THRUST LOADS**

- Thrust measurement  
[NASA-CASE-XMS-05731] c 35 N75-29382

**THRUST MEASUREMENT**

- Thrust dynamometer Patent  
[NASA-CASE-XLE-00702] c 14 N70-40203  
Thrust dynamometer Patent  
[NASA-CASE-XLE-05260] c 14 N71-20429  
Precision thrust gage Patent  
[NASA-CASE-XGS-02319] c 14 N71-22965  
Micro-pound extended range thrust stand Patent  
[NASA-CASE-GSC-10710-1] c 28 N71-27094



**THRUST REVERSAL**

Thrust reverser for a long duct fan engine — for turbofan engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293

**THRUST VECTOR CONTROL**

Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c 28 N70-34294  
Velocity package Patent  
[NASA-CASE-XLA-01339] c 31 N71-15692  
Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173  
Tertiary flow injection thrust vectoring system Patent  
[NASA-CASE-MFS-20831] c 28 N71-29153  
Flight control system  
[NASA-CASE-MSC-13397-1] c 21 N72-25595  
Rocket thrust throttling system  
[NASA-CASE-LEW-10374-1] c 28 N73-13773  
System for imposing directional stability on a rocket-propelled vehicle  
[NASA-CASE-MFS-21311-1] c 20 N76-21275

**THRUST-WEIGHT RATIO**

Missile launch release system Patent  
[NASA-CASE-XMF-03198] c 30 N70-40353

**THYRISTORS**

Electrical power generating system — for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280  
Pulsed thyristor trigger control circuit  
[NASA-CASE-MFS-25616-1] c 33 N82-24428

**TILES**

Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264  
Diced tile thermal protection for spacecraft  
[NASA-CASE-MSC-16366-1] c 24 N79-23142  
Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MSC-18791-1] c 37 N81-24446  
Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18737-1] c 25 N81-29180  
Method of repairing surface damage to porous refractory substrates — shuttle orbiter tiles  
[NASA-CASE-MSC-18736-1] c 27 N81-29231  
High temperature emittance coatings and coating compositions — repairing damaged space shuttle tiles in space  
[NASA-CASE-MSC-18851-1] c 27 N82-26460  
Attachment system for silica tiles — thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456  
Mechanical fastener  
[NASA-CASE-LAR-12738-1] c 18 N82-33419  
Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520

**TILT WING AIRCRAFT**

Free wing assembly for an aircraft  
[NASA-CASE-FRC-10092-1] c 05 N79-12061

**TIME CONSTANT**

Variable time constant smoothing circuit Patent  
[NASA-CASE-XGS-01983] c 10 N70-41964

**TIME DEPENDENCE**

An instrument for determining coincidence and elapse time between independent sources of random sequential events  
[NASA-CASE-LAR-12531-1] c 35 N81-31529

**TIME DISCRIMINATION**

Ultra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit Patent  
[NASA-CASE-XGS-00381] c 09 N70-34819

**TIME DIVISION MULTIPLEXING**

Time division multiplex system  
[NASA-CASE-XGS-05918] c 07 N69-39974  
Time-division multiplexer Patent  
[NASA-CASE-XNP-00431] c 09 N70-38998  
Data processor having multiple sections activated at different times by selective power coupling to the sections Patent  
[NASA-CASE-XGS-04767] c 08 N71-12494  
Data compression system with a minimum time delay unit Patent  
[NASA-CASE-XNP-08832] c 08 N71-12506  
Time division radio relay synchronizing system using different sync code words for in sync and out of sync conditions Patent  
[NASA-CASE-GSC-10373-1] c 07 N71-19773  
Signal processing apparatus for multiplex transmission Patent  
[NASA-CASE-NPO-10388] c 07 N71-24622  
Programmable telemetry system Patent  
[NASA-CASE-GSC-10131-1] c 07 N71-24624

**TIME FUNCTIONS**

Single or joint amplitude distribution analyzer Patent  
[NASA-CASE-XNP-01383] c 09 N71-10659

**TIME LAG**

Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c 21 N70-41930  
Data compression system with a minimum time delay unit Patent  
[NASA-CASE-XNP-08832] c 08 N71-12506  
Signal phase estimator  
[NASA-CASE-NPO-11203] c 10 N72-20224  
Automatic transponder — measurement of the internal delay time of a transponder  
[NASA-CASE-GSC-12075-1] c 32 N77-31350  
Time delay and integration detectors using charge transfer devices  
[NASA-CASE-GSC-12324-1] c 33 N81-33403

**TIME MEASUREMENT**

Time domain phase measuring apparatus  
[NASA-CASE-GSC-12228-1] c 33 N79-10338

**TIME MEASURING INSTRUMENTS**

Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976

**TIME OF FLIGHT SPECTROMETERS**

Time of flight mass spectrometer with feedback means from the detector to the low source and a specific counter Patent  
[NASA-CASE-XNP-01056] c 14 N71-23041

**TIME SERIES ANALYSIS**

Apparatus for statistical time-series analysis of electrical signals  
[NASA-CASE-MSC-12428-1] c 10 N73-25240

**TIME SHARING**

Integrated time shared instrumentation display Patent  
[NASA-CASE-XLA-01952] c 08 N71-12507

**TIME SIGNALS**

System for monitoring signal amplitude ranges  
[NASA-CASE-XMS-04061-1] c 09 N69-39885  
Method of resolving clock synchronization error and means therefor Patent  
[NASA-CASE-XNP-08875] c 10 N71-23099  
Time synchronization system utilizing moon reflected coded signals Patent  
[NASA-CASE-NPO-10143] c 10 N71-26326  
Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137  
System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c 33 N75-19519  
Precise RF timing signal distribution to remote stations — fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186

**TIMING DEVICES**

Synchronous servo loop control system Patent  
[NASA-CASE-XNP-03744] c 10 N71-20448  
Method of resolving clock synchronization error and means therefor Patent  
[NASA-CASE-XNP-08875] c 10 N71-23099  
Resettable monostable pulse generator Patent  
[NASA-CASE-GSC-11139] c 09 N71-27016  
Data transfer system Patent  
[NASA-CASE-NPO-12107] c 08 N71-27255  
High speed photo-optical time recording  
[NASA-CASE-KSC-10294] c 14 N72-18411  
Method of and apparatus for double-exposure holographic interferometry  
[NASA-CASE-MFS-25405-1] c 35 N81-27459

**TIPS**

Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 33 N82-24426

**TIRES**

Excessive temperature warning system Patent  
[NASA-CASE-XLA-01926] c 14 N71-15620  
Resilient wheel Patent  
[NASA-CASE-MFS-13929] c 15 N71-27091

**TISSUES (BIOLOGY)**

Servo-controlled intravital microscope system  
[NASA-CASE-NPO-13214-1] c 35 N75-25123  
Method and system for in vivo measurement of bone tissue using a two level energy source  
[NASA-CASE-MSC-14276-1] c 52 N77-14737  
System for and method of freezing biological tissue  
[NASA-CASE-GSC-12173-1] c 51 N79-10694  
Coupling apparatus for ultrasonic medical diagnostic system  
[NASA-CASE-NPO-13935-1] c 52 N79-14751  
Apparatus and method of inserting a microelectrode in body tissue or the like using vibration means  
[NASA-CASE-NPO-13910-1] c 52 N79-27836  
Multifunctional transducer  
[NASA-CASE-NPO-14329-1] c 52 N81-20703  
Enhancement of in vitro Guayule propagation  
[NASA-CASE-NPO-15213-1] c 51 N81-29728

**TITANATES**

Synthesis of zinc titanate pigment and coatings containing the same  
[NASA-CASE-MFS-13532] c 18 N72-17532

**TITANIUM**

Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443  
Weld-bonded titanium structures  
[NASA-CASE-LAR-11549-1] c 37 N77-11397  
Method of mitigating titanium impurities effects in p-type silicon material for solar cells  
[NASA-CASE-NPO-14635-1] c 44 N80-24741  
High performance filletting sealant  
[NASA-CASE-ARC-11409-1] c 27 N82-32490

**TITANIUM ALLOYS**

Method of inhibiting stress corrosion cracks in titanium alloys Patent  
[NASA-CASE-NPO-10271] c 17 N71-16393  
Nondestructive spot test method for titanium and titanium alloys  
[NASA-CASE-LAR-10539-1] c 17 N73-12547  
Method and apparatus for coating substrates using lasers  
[NASA-CASE-LEW-13526-1] c 26 N82-22347

**TITANIUM NITRIDES**

Improved refractory coatings — sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209

**TITANIUM OXIDES**

Method of preparing zinc orthotitanate pigment  
[NASA-CASE-MFS-23345-1] c 27 N77-30237

**TOLERANCES (MECHANICS)**

Universal restrainer and joint Patent  
[NASA-CASE-XNP-02278] c 15 N71-28951

**TOLUENE**

Supercritical multicomponent solvent coal extraction  
[NASA-CASE-NPO-15767-1] c 28 N82-12241  
Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 28 N82-26481

**TOMOGRAPHY**

System for plotting subsoil structure and method therefor  
[NASA-CASE-NPO-14191-1] c 31 N80-32584

**TOOLS**

Tool attachment for spreading loose elements away from work Patent  
[NASA-CASE-XMF-02107] c 15 N71-10809  
Adjustable attitude guide device Patent  
[NASA-CASE-XLA-07911] c 15 N71-15571  
Tube dimpling tool Patent  
[NASA-CASE-XMS-06876] c 15 N71-21536  
Stud-bonding gun  
[NASA-CASE-MFS-20299] c 15 N72-11392  
Insert facing tool — manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MFS-21485-1] c 37 N74-25968  
Stator rotor tools  
[NASA-CASE-MSC-16000-1] c 37 N78-24544  
Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MSC-18791-1] c 37 N81-24446  
Tubing and cable cutting tool  
[NASA-CASE-LAR-12786-1] c 37 N82-20545  
Computer circuit card puller  
[NASA-CASE-FRC-11042-1] c 60 N82-24839  
Open ended tubing cutters  
[NASA-CASE-MSC-18538-1] c 37 N82-26672  
Connection system  
[NASA-CASE-MSC-20319-1] c 37 N82-31689

**TOOTH DISEASES**

Process for the preparation of brushite crystals  
[NASA-CASE-ERC-10338] c 04 N72-33072

**TOPOGRAPHY**

Method for observing the features characterizing the surface of a land mass  
[NASA-CASE-FRC-11013-1] c 43 N81-17499

**TORCHES**

Apparatus for welding torch angle and seam tracking control Patent  
[NASA-CASE-XMF-03287] c 15 N71-15607  
Electric welding torch Patent  
[NASA-CASE-XMF-02330] c 15 N71-23798  
Computerized system for translating a torch head  
[NASA-CASE-MFS-23620-1] c 37 N79-10421

**TOROIDAL SHELLS**

Toroidal cell and battery — storage battery for high amp-hour load applications  
[NASA-CASE-LEW-12918-1] c 44 N81-24521

**TOROIDS**

Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon Patent  
[NASA-CASE-XGS-01881] c 09 N70-40123  
A brushless dc tachometer  
[NASA-CASE-NPO-15706-1] c 35 N82-26633

**TORQUE**

Bidirectional step torque filter with zero backlash characteristic Patent  
[NASA-CASE-XGS-04227] c 15 N71-21744



Isolation coupling arrangement for a torque measuring system  
[NASA-CASE-XLA-04897] c 15 N72-22482  
High-torque open-end wrench  
[NASA-CASE-NPO-13541-1] c 37 N79-14383  
Acoustic driving of rotor  
[NASA-CASE-NPO-14005-1] c 71 N79-20827  
Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 35 N82-24475  
Magnetic field control — electromechanical torquing device  
[NASA-CASE-MFS-23828-1] c 33 N82-26569  
Missile rolling tail brake torque system — simulating bearing friction on canard controlled missiles  
[NASA-CASE-LAR-12751-1] c 37 N82-26675  
Directional gear ratio transmission  
[NASA-CASE-LAR-12644-1] c 37 N82-29605

## TORQUE MOTORS

Low speed phaselock speed control system — for brushless dc motor  
[NASA-CASE-GSC-11127-1] c 09 N75-24758  
Magnetic bearing and motor  
[NASA-CASE-GSC-12725-1] c 37 N82-29603

## TORQUEMETERS

Optical torqueometer Patent  
[NASA-CASE-XLE-00503] c 14 N70-34818  
Balance torqueometer Patent  
[NASA-CASE-XGS-01013] c 14 N71-23725  
Pressure suit joint analyzer  
[NASA-CASE-ARC-11314-1] c 54 N82-26987

## TORSO

Restraint torso for a pressurized suit  
[NASA-CASE-MSC-12397-1] c 05 N72-25119  
Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736

## TOUCH

Mechanically actuated triggered hand  
[NASA-CASE-MFS-20413] c 15 N72-21463  
Method for measuring cutaneous sensory perception  
[NASA-CASE-MSC-13609-1] c 05 N72-25122  
Tactile sensing means for prosthetic limbs  
[NASA-CASE-MFS-16570-1] c 05 N73-32013

## TOWED BODIES

Apparatus for releasably connecting first and second objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 15 N82-28318

## TOWERS

Aerial capsule emergency separation device Patent  
[NASA-CASE-XLA-00115] c 03 N70-33343

## TOXICITY

Glass compositions with a high modulus of elasticity — nontoxic glass fibers  
[NASA-CASE-HQN-10274-1] c 27 N82-29451

## TOXICITY AND SAFETY HAZARD

Apparatus for remote handling of materials — mixing or analyzing dangerous chemicals  
[NASA-CASE-LAR-10634-1] c 37 N74-18123

## TOXICOLOGY

Exposure system for animals Patent  
[NASA-CASE-XAC-05333] c 11 N71-22875

## TRACE CONTAMINANTS

Microbalance including crystal oscillators for measuring contaminants in a gas system Patent  
[NASA-CASE-NPO-10144] c 14 N71-17701  
Method for removing oxygen impurities from cesium Patent  
[NASA-CASE-XNP-04262-2] c 17 N71-26773  
Electric discharge for treatment of trace contaminants  
[NASA-CASE-ARC-10975-1] c 33 N79-15245

## TRACE ELEMENTS

Ion microprobe mass spectrometer for analyzing fluid materials Patent  
[NASA-CASE-ERC-10014] c 14 N71-28863  
Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c 25 N76-18245  
Nulling device for detection of trace gases by NDIR absorption  
[NASA-CASE-ARC-10760-1] c 25 N76-22323  
Thermoluminescent aerosol analysis  
[NASA-CASE-LAR-12046-1] c 25 N78-15210

## TRACKING (POSITION)

Plurality of photosensitive cells on a pyramidal base for planetary trackers  
[NASA-CASE-XNP-04180] c 07 N69-39736  
Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699  
Method and apparatus for aligning a laser beam projector Patent  
[NASA-CASE-NPO-11087] c 23 N71-29125  
Mount for continuously orienting a collector dish in a system adapted to perform both diurnal and seasonal solar tracking  
[NASA-CASE-MFS-23267-1] c 35 N77-20401

System and method for tracking a signal source — employing feedback control  
[NASA-CASE-HQN-10880-1] c 17 N78-17140  
Sun tracking solar energy collector  
[NASA-CASE-NPO-13921-1] c 44 N79-14526

## TRACKING FILTERS

Automatic acquisition system for phase-lock loop  
[NASA-CASE-XGS-04994] c 09 N69-21543  
Apparatus and method for stabilized phase detection for binary signal tracking loops  
[NASA-CASE-MSC-16461-1] c 33 N79-11313  
PN lock indicator for dithered PN code tracking loop  
[NASA-CASE-NPO-14435-1] c 33 N81-33405

## TRACKING RADAR

Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460  
Phase-locked loop with sideband rejecting properties Patent  
[NASA-CASE-XNP-02723] c 07 N70-41680  
Radar antenna system for acquisition and tracking Patent  
[NASA-CASE-XMS-09610] c 07 N71-24625  
Acquisition and tracking system for optical radar  
[NASA-CASE-MFS-20125] c 16 N72-13437  
Synthetic aperture radar target simulator  
[NASA-CASE-NPO-15024-1] c 32 N82-10286

## TRACKING STATIONS

Optical monitor panel Patent  
[NASA-CASE-XKS-03509] c 14 N71-23175  
Simultaneous acquisition of tracking data from two stations  
[NASA-CASE-NPO-13292-1] c 32 N75-15854

## TRAFFIC CONTROL

Traffic survey system — using optical scanners  
[NASA-CASE-MFS-22631-1] c 66 N76-19888

## TRAILERS

Low-drag ground vehicle particularly suited for use in safety transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288

## TRAILING-EDGE FLAPS

Double hinged flap Patent  
[NASA-CASE-XLA-01290] c 02 N70-42016  
Variable area exhaust nozzle  
[NASA-CASE-LEW-12378-1] c 07 N79-14097  
Propulsive lateral control nozzle  
[NASA-CASE-LAR-12136-1] c 08 N81-33210  
Slotted variable camber flap  
[NASA-CASE-LAR-12541-1] c 05 N82-18203

## TRAINING SIMULATORS

Mechanical simulator of low gravity conditions Patent  
[NASA-CASE-MFS-10555] c 11 N71-19494  
Subgravity simulator Patent  
[NASA-CASE-XMS-04798] c 11 N71-21474  
Kinesthetic control simulator — for pilot training  
[NASA-CASE-LAR-10276-1] c 09 N75-15662

## TRAJECTORY ANALYSIS

Means for visually indicating flight paths of vehicles between the Earth, Venus, and Mercury Patent  
[NASA-CASE-XNP-00708] c 14 N70-35394  
Method of planetary atmospheric investigation using a split-trajectory dual flyby mode Patent  
[NASA-CASE-XAC-08494] c 30 N71-15990

## TRAJECTORY CONTROL

Trajectory-correction propulsion system Patent  
[NASA-CASE-XNP-01104] c 28 N70-39931  
Technique for control of free-flight rocket vehicles Patent  
[NASA-CASE-XLA-00937] c 31 N71-17691  
Apparatus for automatically stabilizing the attitude of a nonguided vehicle  
[NASA-CASE-ARC-10134] c 30 N72-17873

## TRANSFORMERS

Pressure variable capacitor  
[NASA-CASE-XNP-09752] c 14 N69-21541  
Bootstrap unloader Patent  
[NASA-CASE-XNP-09768] c 09 N71-12516  
Vibrating structure displacement measuring instrument Patent  
[NASA-CASE-XLA-03135] c 32 N71-16428  
Contour surveying system Patent  
[NASA-CASE-XLA-08646] c 14 N71-17586  
Rotary bead dropper and selector for testing micrometeorite detectors Patent  
[NASA-CASE-XGS-03304] c 09 N71-22988  
Self-calibrating displacement transducer Patent  
[NASA-CASE-XLA-00781] c 09 N71-22999  
Extensometer frame  
[NASA-CASE-XLA-10322] c 15 N72-17452  
Split range transducer  
[NASA-CASE-XLA-11189] c 10 N72-20222  
Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200  
Magnifying scratch gage force transducer  
[NASA-CASE-LAR-10496-1] c 14 N72-22437  
Intruder detection system  
[NASA-CASE-ARC-10097-2] c 07 N73-25160

Acoustical transducer calibrating system and apparatus

[NASA-CASE-FRC-10060-1] c 14 N73-27379  
Demodulator for camera transducers  
[NASA-CASE-NUC-10107-1] c 33 N74-17930  
LC-oscillator with automatic stabilized amplitude via bias current control — power supply circuit for transducers  
[NASA-CASE-MFS-21698-1] c 33 N74-26732  
Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c 52 N74-27566  
Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-3] c 33 N75-19520  
Subminiature insertable force transducer — including a strain gage to measure forces in muscles  
[NASA-CASE-NPO-13423-1] c 33 N75-31329  
Self-supporting strain transducer  
[NASA-CASE-LAR-11263-1] c 35 N75-33369  
Miniature muscle displacement transducer  
[NASA-CASE-NPO-13519-1] c 33 N76-19338  
Method and apparatus for nondestructive testing of pressure vessels  
[NASA-CASE-NPO-12142-1] c 38 N76-28563  
Myocardium wall thickness transducer and measuring method  
[NASA-CASE-NPO-13644-1] c 52 N76-29895  
Solar cell angular position transducer  
[NASA-CASE-LAR-11999-1] c 44 N80-18552  
Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072  
Multifunctional transducer  
[NASA-CASE-NPO-14329-1] c 52 N81-20703  
Heat pipe cooled probe  
[NASA-CASE-LAR-12586-1] c 44 N81-24525  
Photomechanical transducer  
[NASA-CASE-NPO-14363-1] c 39 N81-25400  
Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470  
Thin film strain transducer — for strain monitoring of high altitude balloons  
[NASA-CASE-WLP-10055-1] c 35 N82-26632  
Strain gage calibration  
[NASA-CASE-LAR-12743-1] c 35 N82-32661

## TRANSFER FUNCTIONS

Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 36 N82-28619

## TRANSFORMERS

Signal multiplexer  
[NASA-CASE-XGS-01110] c 07 N69-24334  
Insertion loss measuring apparatus having transformer means connected across a pair of bolometers Patent  
[NASA-CASE-XNP-01193] c 10 N71-16057  
Saturation current protection apparatus for saturable core transformers Patent  
[NASA-CASE-ERC-10075] c 09 N71-24800  
Unsaturating saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24893  
Electronically resettable fuse Patent  
[NASA-CASE-XGS-11177] c 09 N71-27001  
Voltage regulator Patent  
[NASA-CASE-ERC-10113] c 09 N71-27053  
Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948  
Saturation current protection apparatus for saturable core transformers  
[NASA-CASE-ERC-10075-2] c 09 N72-22196  
Failsafe multiple transformer circuit configuration  
[NASA-CASE-NPO-11078] c 09 N72-25262  
Banded transformer cores  
[NASA-CASE-NPO-11966-1] c 33 N74-17928  
Solid-state current transformer  
[NASA-CASE-MFS-22560-1] c 33 N77-14335  
Transformer regulated self-stabilizing chopper  
[NASA-CASE-XGS-09186] c 33 N78-17295  
Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18193  
Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257  
System for automatically switching transformer coupled lines  
[NASA-CASE-MSC-16697-1] c 33 N79-28415  
Three phase power factor controller  
[NASA-CASE-MFS-25535-1] c 33 N81-12330  
Base drive for paralleled inverter systems  
[NASA-CASE-NPO-14163-1] c 33 N81-14220  
Low current linearization of magnetic amplifier for dc transducer  
[NASA-CASE-NPO-14617-1] c 33 N81-24338  
Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404  
Non-contacting power transfer device  
[NASA-CASE-GSC-12595-1] c 33 N82-24422



**TRANSIENT HEATING**

- Thermocouple installation  
[NASA-CASE-NPO-13540-1] c 35 N77-14409
- Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484

**TRANSIENT LOADS**

- Deployable solar cell array  
[NASA-CASE-NPO-10883] c 31 N72-22874

**TRANSISTOR AMPLIFIERS**

- Apparatus for overcurrent protection of a push-pull amplifier Patent  
[NASA-CASE-MSC-12033-1] c 09 N71-13531
- Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N82-11359

**TRANSISTOR CIRCUITS**

- Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317
- Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463
- Pulse counting circuit which simultaneously indicates the occurrence of the nth pulse Patent  
[NASA-CASE-XMF-00906] c 09 N70-41655
- Linear sawtooth voltage-wave generator employing transistor timing circuit having capacitor-zener diode combination feedback Patent  
[NASA-CASE-XMS-01315] c 09 N70-41675
- Switching circuit employing regeneratively connected complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032
- High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c 09 N71-19516
- Complementary regenerative switch Patent  
[NASA-CASE-XGS-02751] c 09 N71-23015
- Transistor drive regulator Patent  
[NASA-CASE-LEW-10233] c 10 N71-27126
- Multiple slope sweep generator Patent  
[NASA-CASE-XMS-03542] c 09 N71-28926
- Broadband video process with very high input impedance  
[NASA-CASE-NPO-10199] c 09 N72-17156
- Ultra-stable oscillator with complementary transistors  
[NASA-CASE-GSC-11513-1] c 33 N74-20862
- Inrush current limiter  
[NASA-CASE-GSC-11789-1] c 33 N77-14333
- Temperature compensated current source  
[NASA-CASE-MSC-11235] c 33 N78-17294
- Inductorless narrow-band filter/amplifier  
[NASA-CASE-GSC-12410-1] c 33 N79-24260
- Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404
- Power converter  
[NASA-CASE-FRC-11014-1] c 33 N82-18494

**TRANSISTORS**

- Power supply circuit Patent  
[NASA-CASE-XMS-00913] c 10 N71-23543
- Switching circuit Patent  
[NASA-CASE-XNP-06505] c 10 N71-24799
- Cascaded complementary pair broadband transistor amplifiers Patent  
[NASA-CASE-NPO-10003] c 10 N71-26415
- Fast response low power drain logic circuits  
[NASA-CASE-GSC-10878-1] c 10 N72-22236
- Coaxial inverted geometry transistor having buried emitter  
[NASA-CASE-ARC-10330-1] c 09 N73-32112
- Four phase logic systems --- including integrated microcircuits  
[NASA-CASE-MSC-14240-1] c 33 N75-14957
- Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N78-12321
- Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257
- Base drive for paralleled inverter systems  
[NASA-CASE-NPO-14163-1] c 33 N81-14220

**TRANSITION FLOW**

- Ablation article and method  
[NASA-CASE-LAR-10439-1] c 33 N73-27796

**TRANSITION TEMPERATURE**

- Process for preparing thermoplastic aromatic polyimides  
[NASA-CASE-LAR-11828-1] c 27 N78-32261

**TRANSLATIONAL MOTION**

- Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815
- Translating horizontal tail Patent  
[NASA-CASE-XLA-08801-1] c 02 N71-11043
- Semi-linear ball bearing Patent  
[NASA-CASE-XLA-02809] c 15 N71-22982
- Positioning mechanism  
[NASA-CASE-NPO-10679] c 15 N72-21462

**TRANSLATORS**

- Serial data correlator/code translator  
[NASA-CASE-KSC-11025-1] c 32 N79-28383

**TRANSMISSION EFFICIENCY**

- Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c 44 N74-19870
- Linear phase demodulator including a phase locked loop with auxiliary feedback loop  
[NASA-CASE-GSC-12018-1] c 33 N77-14334

**TRANSMISSION LINES**

- Validation device for spacecraft checkout equipment Patent  
[NASA-CASE-XKS-10543] c 07 N71-26292
- Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191
- Phase modulator Patent  
[NASA-CASE-MSC-13201-1] c 07 N71-28429
- Shielded flat cable  
[NASA-CASE-MFS-13687-2] c 09 N72-22198
- Phase control circuits using frequency multiplications for phased array antennas  
[NASA-CASE-ERC-10285] c 10 N73-16206
- Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956
- System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c 33 N74-17927
- Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310
- System for automatically switching transformer coupled lines  
[NASA-CASE-MSC-16697-1] c 33 N79-28415

**TRANSMISSIONS (MACHINE ELEMENTS)**

- Compensating linkage for main rotor control  
[NASA-CASE-LAR-11797-1] c 05 N81-19087
- Directional gear ratio transmission  
[NASA-CASE-LAR-12644-1] c 37 N82-29605

**TRANSMITTANCE**

- Electrical rotary joint apparatus for large space structures  
[NASA-CASE-MFS-23981-1] c 33 N81-19394

**TRANSMITTER RECEIVERS**

- Integrated thermoelectric generator/space antenna combination  
[NASA-CASE-XER-09521] c 09 N72-12136
- Location identification system  
[NASA-CASE-ERC-10324] c 07 N72-25173
- Automatic vehicle location system  
[NASA-CASE-NPO-11850-1] c 32 N74-12912
- Digital communication system  
[NASA-CASE-MSC-13912-1] c 32 N74-30524

**TRANSMITTERS**

- Temperature telemetric transmitter Patent  
[NASA-CASE-NPO-10649] c 07 N71-24840
- Two carrier communication system with single transmitter  
[NASA-CASE-NPO-11548] c 07 N73-26118
- Miniature multichannel biotelemetry system  
[NASA-CASE-NPO-13065-1] c 52 N74-26625
- Digital transmitter for data bus communications system  
[NASA-CASE-MSC-14558-1] c 32 N75-21486
- Apparatus for endoscopic examination --- analysis of the propulsion system configuration and transmitter  
[NASA-CASE-NPO-14092-1] c 52 N80-16725

**TRANSONIC SPEED**

- Leading edge curvature based on convective heating Patent  
[NASA-CASE-XLA-01486] c 01 N71-23497

**TRANSONIC WIND TUNNELS**

- Wind tunnel test section  
[NASA-CASE-MFS-20509] c 11 N72-17183

**TRANSPARENCY**

- Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190
- Method and apparatus for producing an image from a transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932
- Method of fabricating a photovoltaic module of a substantially transparent construction  
[NASA-CASE-NPO-14303-1] c 44 N80-18550
- Heat transparent high intensity high efficiency solar cell  
[NASA-CASE-LEW-12892-1] c 44 N81-27598

**TRANSPARATION**

- Rocket chamber and method of making  
[NASA-CASE-LEW-11118-2] c 20 N76-14191

**TRANSPONDERS**

- Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391
- Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118

- Code regenerative clean-up loop transponder for a mu-type ranging system  
[NASA-CASE-NPO-11707] c 07 N73-25161
- Automatic vehicle location system  
[NASA-CASE-NPO-11850-1] c 32 N74-12912
- Simultaneous acquisition of tracking data from two stations  
[NASA-CASE-NPO-13292-1] c 32 N75-15854
- Automatic transponder --- measurement of the internal delay time of a transponder  
[NASA-CASE-GSC-12075-1] c 32 N77-31350

**TRANSPORTATION**

- Supporting and protecting device Patent  
[NASA-CASE-XMF-00580] c 11 N70-35383

**TRANSVERSE ACCELERATION**

- Rim inertial measuring system  
[NASA-CASE-LAR-12052-1] c 18 N81-29152

**TRAPS**

- Deep trap, laser activated image converting system  
[NASA-CASE-NPO-13131-1] c 36 N75-19652

**TRAVELING WAVE AMPLIFIERS**

- Serrodyne frequency converter re-entrant amplifier system Patent  
[NASA-CASE-XGS-01022] c 07 N71-16088
- Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c 33 N75-27251
- Ladder supported ring bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N81-24348

**TRAVELING WAVE MASERS**

- Folded traveling wave maser structure Patent  
[NASA-CASE-XNP-05219] c 16 N71-15550
- High-gain, broadband traveling wave maser Patent  
[NASA-CASE-NPO-10548] c 16 N71-24831
- Independent gain and bandwidth control of a traveling wave maser  
[NASA-CASE-NPO-13801-1] c 36 N78-18410

**TRAVELING WAVE TUBES**

- Segmented superconducting magnet for a broadband traveling wave maser Patent  
[NASA-CASE-XGS-10518] c 16 N71-28554
- Traveling wave tube circuit  
[NASA-CASE-LEW-12013-1] c 33 N79-10339
- Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N80-19425
- Multistage depressed collector for dual mode operation --- for microwave transmitting tubes  
[NASA-CASE-LEW-13282-1] c 33 N82-24415

**TRAVELING WAVES**

- Maser for frequencies in the 7-20 GHz range  
[NASA-CASE-NPO-11437] c 16 N72-28521

**TREADMILLS**

- Tread drum for animals --- having an electrical shock station  
[NASA-CASE-ARC-10917-1] c 51 N78-27733

**TRIGGER CIRCUITS**

- Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463
- Electric arc driven wind tunnel Patent  
[NASA-CASE-XMF-00411] c 11 N70-36913
- Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c 14 N71-26244
- Multivibrator circuit with means to prevent false triggering from supply voltage fluctuations Patent  
[NASA-CASE-ARC-10137-1] c 09 N71-28468
- SCR lamp driver  
[NASA-CASE-GSC-10221-1] c 09 N72-23171
- Rapidly pulsed, high intensity, incoherent light source  
[NASA-CASE-XLE-2529-3] c 33 N74-20859
- Pulsed thyristor trigger control circuit  
[NASA-CASE-MFS-25616-1] c 33 N82-24428

**TRIGONOMETRY**

- Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688

**TRIMERS**

- Trifunctional alcohol  
[NASA-CASE-NPO-10714] c 06 N69-31244
- Trimerization of aromatic nitriles  
[NASA-CASE-LEW-12053-1] c 27 N78-15276
- Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307

**TRIODES**

- Triode thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898

**TRITIUM**

- Method for determining the state of charge of batteries by the use of tracers Patent  
[NASA-CASE-XNP-01464] c 03 N71-10728



- Method and apparatus for producing concentric hollow spheres  
[NASA-CASE-NPO-14596-3] c 27 N82-26461
- TRUCKS**  
Fifth wheel  
[NASA-CASE-FRC-10081-1] c 37 N77-14477  
Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288
- TRUSSES**  
Low mass truss structure  
[NASA-CASE-LAR-10546-1] c 11 N72-25287  
Lightweight structural columns --- space erectable trusses  
[NASA-CASE-LAR-12095-1] c 31 N81-25258  
Structural members, method and apparatus  
[NASA-CASE-MSG-16217-1] c 31 N81-27323
- TUBE GRIDS**  
Method for fabricating solar cells having integrated collector grids  
[NASA-CASE-LEW-12819-2] c 44 N79-18444
- TUBE HEAT EXCHANGERS**  
Electrothermal rockets having improved heat exchangers Patent  
[NASA-CASE-XLE-01783] c 28 N70-34175  
Procedure and apparatus for determination of water in nitrogen tetroxide  
[NASA-CASE-NPO-10234] c 06 N72-17094  
Liquid cooled brassiere and method of diagnosing malignant tumors therewith  
[NASA-CASE-ARC-11007-1] c 52 N77-14736  
Solar energy receiver for a Stirling engine  
[NASA-CASE-NPO-14619-1] c 44 N81-17518
- TUBES**  
Method of making tubes Patent  
[NASA-CASE-XGS-04175] c 15 N71-18579  
Tube sealing device Patent  
[NASA-CASE-NPO-10431] c 15 N71-29132
- TUMBLING MOTION**  
Tumbler system to provide random motion  
[NASA-CASE-XGS-02437] c 15 N69-21472  
Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N81-22048
- TUMORS**  
Liquid cooled brassiere and method of diagnosing malignant tumors therewith  
[NASA-CASE-ARC-11007-1] c 52 N77-14736
- TUNABLE LASERS**  
Tunable injection-locked pulsed CO2 laser  
[NASA-CASE-NPO-14984-1] c 36 N81-15350  
Spatial energy distribution --- scanning a tunable diode laser beam automatically  
[NASA-CASE-LAR-12631-1] c 35 N82-18557
- TUNGSTEN**  
Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786  
Method of producing porous tungsten ionizers for ion rocket engines Patent  
[NASA-CASE-XLE-00455] c 28 N70-38197  
Small plasma probe Patent  
[NASA-CASE-XLE-02578] c 25 N71-20747  
Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c 17 N71-29137  
Tungsten contacts on silicon substrates  
[NASA-CASE-GSC-10695-1] c 09 N72-25259  
Nuclear thermionic converter --- tungsten-thorium oxide rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891
- TUNGSTEN ALLOYS**  
Evaporant holder  
[NASA-CASE-XLA-03105] c 15 N69-27483  
Cobalt-base alloy  
[NASA-CASE-LEW-10436-1] c 17 N73-32415  
Directionally solidified eutectic gamma plus beta nickel-base superalloys  
[NASA-CASE-LEW-12906-1] c 26 N77-32279
- TUNING**  
Active tuned circuit  
[NASA-CASE-GSC-11340-1] c 10 N72-33230  
Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235  
Tuned analog network --- bandpass filter networks  
[NASA-CASE-GSC-12650-1] c 33 N82-10324  
Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N82-11359
- TUNNEL DIODES**  
Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317
- TUNNELING (EXCAVATION)**  
Intrusion detection method and apparatus --- monitoring unwanted subterranean entry and departure  
[NASA-CASE-ARC-11317-1] c 35 N81-19430

## TUNNELS

- Deployable flexible tunnel  
[NASA-CASE-MFS-22636-1] c 37 N76-22540
- TURBINE BLADES**  
Transpiration cooled turbine blade manufactured from wires Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226  
Modification and improvements to cooled blades Patent  
[NASA-CASE-XLE-00092] c 15 N70-33264  
High temperature nickel-base alloy Patent  
[NASA-CASE-XLE-00151] c 17 N70-33283  
External liquid-spray cooling of turbine blades Patent  
[NASA-CASE-XLE-00037] c 28 N70-33372  
Liquid spray cooling method Patent  
[NASA-CASE-XLE-00027] c 33 N71-29152  
Welding blades to rotors  
[NASA-CASE-LEW-10533-1] c 15 N73-28515  
Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170  
Improved method for driving two-phase turbines with enhanced efficiency  
[NASA-CASE-NPO-15037-1] c 37 N80-26660  
Wingtip vortex turbine  
[NASA-CASE-LAR-12544-1] c 07 N81-27096  
Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26674  
Method of protecting a surface with a silicon-slurry/aluminate coating --- coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441  
Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453  
Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 44 N82-29713
- TURBINE ENGINES**  
High speed, self-acting shaft seal --- for use in turbine engines  
[NASA-CASE-LEW-11274-1] c 37 N75-21631  
Dual cycle aircraft turbine engine  
[NASA-CASE-LAR-11310-1] c 07 N77-28118  
Composite seal for turbomachinery --- backings for turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318  
Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658
- TURBINE PUMPS**  
Pulsed energy power system Patent  
[NASA-CASE-MSG-13112] c 03 N71-11057  
Cryogenic cooling system Patent  
[NASA-CASE-NPO-10467] c 23 N71-26654  
Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502  
Supercharged topping rocket propellant feed system  
[NASA-CASE-XLE-02062-1] c 20 N80-14188
- TURBINE WHEELS**  
Locking device for turbine rotor blades Patent  
[NASA-CASE-XNP-00816] c 28 N71-28928  
Apparatus for welding blades to rotors  
[NASA-CASE-LEW-10533-2] c 37 N74-11300  
Blade retainer assembly  
[NASA-CASE-LEW-12608-1] c 07 N77-27116
- TURBINES**  
Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294
- TURBOCOMPRESSORS**  
Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00170] c 15 N70-36412  
Apparatus and method for reducing thermal stress in a turbine rotor  
[NASA-CASE-LEW-12232-1] c 07 N79-10057  
Diesel engine catalytic combustor system --- turbocharging  
[NASA-CASE-LEW-12995-1] c 37 N80-26659
- TURBOFAN ENGINES**  
Supersonic fan blading --- noise reduction in turbofan engines  
[NASA-CASE-LEW-11402-1] c 07 N74-28226  
Noise suppressor --- for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418  
Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c 07 N76-18131  
Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055  
Method and apparatus for rapid thrust increases in a turbofan engine  
[NASA-CASE-LEW-12971-1] c 07 N80-18039  
Integrated control system for a gas turbine engine  
[NASA-CASE-LEW-12594-2] c 07 N81-19116

- Thrust reverser for a long duct fan engine --- for turbofan engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293
- TURBOFANS**  
Dual output variable pitch turbofan actuation system  
[NASA-CASE-LEW-12419-1] c 07 N77-14025  
Reverse pitch fan with divided splitter  
[NASA-CASE-LEW-12760-1] c 07 N77-17059
- TURBOJET ENGINE CONTROL**  
Integrated control system for a gas turbine engine  
[NASA-CASE-LEW-12594-2] c 07 N81-19116
- TURBOJET ENGINES**  
Telescoping-spike supersonic inlet for aircraft engines Patent  
[NASA-CASE-XLE-00005] c 28 N70-39899  
Gas turbine combustion apparatus Patent  
[NASA-CASE-XLE-103477-1] c 28 N71-20330  
Reduction of nitric oxide emissions from a combustor  
[NASA-CASE-ARC-10814-2] c 07 N80-26298
- TURBOMACHINE BLADES**  
Platform for a swing root turbomachinery blade  
[NASA-CASE-LEW-12312-1] c 07 N77-32148  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658
- TURBOMACHINERY**  
Turbo-machine blade vibration damper Patent  
[NASA-CASE-XLE-00155] c 28 N71-29154  
Centrifugal-reciprocating compressor  
[NASA-CASE-NPO-14597-1] c 37 N79-23431  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540  
Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453
- TURBOSHAFTS**  
Optical torque meter Patent  
[NASA-CASE-XLE-00503] c 14 N70-34818  
High speed, self-acting shaft seal --- for use in turbine engines  
[NASA-CASE-LEW-11274-1] c 37 N75-21631  
Improved method for driving two-phase turbines with enhanced efficiency  
[NASA-CASE-NPO-15037-1] c 37 N80-26660
- TURBULENCE METERS**  
Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470
- TURBULENCE FLOW**  
Exhaust flow deflector --- for ducted gas flow  
[NASA-CASE-LAR-11570-1] c 34 N76-18364  
System for measuring Reynolds in a turbulently flowing fluid --- signal processing  
[NASA-CASE-ARC-10755-2] c 34 N76-27517  
System for measuring three fluctuating velocity components in a turbulently flowing fluid  
[NASA-CASE-ARC-10974-1] c 34 N77-27345  
Detection of the transitional layer between laminar and turbulent flow areas on a wing surface --- using an accelerometer to measure pressure levels during wind tunnel tests  
[NASA-CASE-LAR-12261-1] c 02 N80-20224  
Amplified wind turbine apparatus  
[NASA-CASE-MFS-23830-1] c 44 N82-24639
- TURNSTILE ANTENNAS**  
Method and means for damping nutation in a satellite Patent  
[NASA-CASE-XMF-00442] c 31 N71-10747  
Broadband modified turnstile antenna Patent  
[NASA-CASE-MSG-12209] c 09 N71-24842  
Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c 32 N74-20864  
Turnstile and flared cone UHF antenna  
[NASA-CASE-LAR-10970-1] c 33 N76-14372
- TURRET**  
Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent  
[NASA-CASE-NPO-10625] c 09 N71-26182
- TWISTING**  
Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279
- TWO BODY PROBLEM**  
Instrument for measuring potentials on two dimensional electric field plots Patent  
[NASA-CASE-XLA-08493] c 10 N71-19421
- TWO DIMENSIONAL BODIES**  
Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-1] c 60 N77-14751
- TWO PHASE FLOW**  
Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c 15 N70-22192  
Booster tank system Patent  
[NASA-CASE-MSG-12390] c 27 N71-29155  
Two phase flow system with discrete impinging two-phase jets  
[NASA-CASE-NPO-11556] c 12 N72-25292



- Method and turbine for extracting kinetic energy from a stream of two-phase fluid  
[NASA-CASE-NPO-14130-1] c 34 N79-20335
- Improved method for driving two-phase turbines with enhanced efficiency  
[NASA-CASE-NPO-15037-1] c 37 N80-26660
- TWO STAGE TURBINES**  
Improved method for driving two-phase turbines with enhanced efficiency  
[NASA-CASE-NPO-15037-1] c 37 N80-26660
- TYPEWRITERS**  
Guide for a typewriter  
[NASA-CASE-MFS-15218-1] c 37 N77-19457
- U**
- U BENDS**  
Technique of elbow bending small jacketed transfer lines  
Patent  
[NASA-CASE-XNP-10475] c 15 N71-24679
- Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129
- ULCERS**  
Indomethacin-antihistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-2] c 52 N81-14613
- Indomethacin-antihistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-1] c 52 N81-29764
- ULLAGE**  
Penetrating radiation system for detecting the amount of liquid in a tank  
Patent  
[NASA-CASE-MSC-12280] c 27 N71-16348
- ULTRAHIGH FREQUENCIES**  
Turnstile and flared cone UHF antenna  
[NASA-CASE-LAR-10970-1] c 33 N76-14372
- Dual band combiner for horn antenna  
[NASA-CASE-NPO-14519-1] c 32 N80-23524
- ULTRAHIGH VACUUM**  
Method of lubricating rolling element bearings  
Patent  
[NASA-CASE-XLE-09527] c 15 N71-17688
- Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c 14 N73-30390
- Ultrahigh vacuum gauge having two collector electrodes  
[NASA-CASE-LAR-02743] c 14 N73-32324
- In situ transfer standard for ultrahigh vacuum gage calibration  
[NASA-CASE-LAR-10862-1] c 35 N74-15092
- ULTRASONIC AGITATION**  
Apparatus for recovering matter adhered to a host surface  
[NASA-CASE-NPO-11213] c 15 N73-20514
- ULTRASONIC CLEANING**  
Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862
- ULTRASONIC FLAW DETECTION**  
Length mode piezoelectric ultrasonic transducer for inspection of solid objects  
[NASA-CASE-MSC-19672-1] c 38 N79-14398
- ULTRASONIC RADIATION**  
Ultrasonic biomedical measuring and recording apparatus — for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10597-1] c 52 N74-20726
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-1] c 52 N76-33835
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-2] c 52 N79-26771
- ULTRASONIC TESTS**  
Ultrasonic scanner for radial and flat panels  
[NASA-CASE-MFS-20335-1] c 35 N74-10415
- Ultrasonic scanning system for in-place inspection of brazed tube joints  
[NASA-CASE-MFS-20767-1] c 38 N74-15130
- Method and apparatus for nondestructive testing — using high frequency arc discharges  
[NASA-CASE-MFS-21233-1] c 38 N74-15395
- CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512
- ULTRASONIC WAVE TRANSDUCERS**  
Apparatus for recovering matter adhered to a host surface  
[NASA-CASE-NPO-11213] c 15 N73-20514
- Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c 35 N75-12271
- Reference apparatus for medical ultrasonic transducer  
[NASA-CASE-ARC-10753-1] c 54 N75-27760
- Ultrasonic calibration device — for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c 35 N76-15432
- Coupling apparatus for ultrasonic medical diagnostic system  
[NASA-CASE-NPO-13935-1] c 52 N79-14751

- CDS solid state phase insensitive ultrasonic transducer — annealing cadmium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559
- Liquid-immersible electrostatic ultrasonic transducer  
[NASA-CASE-LAR-12465-1] c 33 N82-26572
- ULTRASONIC WELDING**  
Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c 37 N75-25185
- ULTRASONICS**  
Methods and apparatus employing vibratory energy for wrenching Patent  
[NASA-CASE-MFS-20586] c 15 N71-17686
- Pseudo continuous wave instrument — ultrasonics  
[NASA-CASE-LAR-12260-1] c 35 N79-10390
- Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N82-26961
- ULTRAVIOLET FILTERS**  
Ultraviolet filter  
[NASA-CASE-XNP-02340] c 23 N69-24332
- Ultraviolet resonance lamp Patent  
[NASA-CASE-ARC-10030] c 09 N71-12521
- ULTRAVIOLET LASERS**  
Stabilization of He2(a 3 Sigma u+ molecules in liquid helium by optical pumping for vacuum UV laser 6  
[NASA-CASE-NPO-13993-1] c 72 N79-13826
- ULTRAVIOLET RADIATION**  
Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979
- Ultraviolet resonance lamp Patent  
[NASA-CASE-ARC-10030] c 09 N71-12521
- Leak detector wherein a probe is monitored with ultraviolet radiation Patent  
[NASA-CASE-ERC-10034] c 15 N71-24896
- Phototropic composition of matter  
[NASA-CASE-XGS-03736] c 14 N72-22443
- Transmitting and reflecting diffuser — for ultraviolet light  
[NASA-CASE-LAR-10385-2] c 70 N74-13436
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156
- Light shield and cooling apparatus — high intensity ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c 34 N74-23066
- Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410
- Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c 36 N76-29575
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N76-32315
- Violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments  
[NASA-CASE-MSC-16074-1] c 27 N80-26446
- ULTRAVIOLET REFLECTION**  
Alkali metal silicate protective coating Patent  
[NASA-CASE-XGS-04799] c 18 N71-24183
- Ultraviolet light reflective coating  
[NASA-CASE-GSC-11786-1] c 24 N76-24363
- Transmitting and reflecting diffuser — using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879
- ULTRAVIOLET SPECTRA**  
Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428
- Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 72 N82-24953
- ULTRAVIOLET SPECTROMETERS**  
Concave grating spectrometer Patent  
[NASA-CASE-XGS-01036] c 14 N70-40003
- Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699
- UMBILICAL CONNECTORS**  
Umbilical separator for rockets Patent  
[NASA-CASE-XNP-00425] c 11 N70-38202
- Umbilical disconnect Patent  
[NASA-CASE-XLA-00711] c 03 N71-12258
- Remote controlled tubular disconnect Patent  
[NASA-CASE-XLA-01396] c 03 N71-12259
- Serpentuator Patent  
[NASA-CASE-XMF-05344] c 31 N71-16345
- Breakaway connector  
[NASA-CASE-NPO-11140] c 15 N72-17455
- Quick disconnect coupling  
[NASA-CASE-NPO-11202] c 15 N72-25450
- Deployable flexible tunnel  
[NASA-CASE-MFS-22636-1] c 37 N76-22540
- High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272
- UMBILICAL TOWERS**  
Emergency escape system Patent  
[NASA-CASE-XKS-02342] c 05 N71-11189

## UNDERWATER ENGINEERING

- Ejectable underwater sound source recovery assembly  
[NASA-CASE-LAR-10595-1] c 35 N74-16135
- Underwater seismic source — for petroleum exploration  
[NASA-CASE-NPO-14255-1] c 46 N79-23555

## UNDERWATER TESTS

- Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332] c 05 N72-20097
- Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332-2] c 05 N73-25125

## UNIFORM FLOW

- Wind tunnel flow generation section  
[NASA-CASE-ARC-10710-1] c 09 N75-12969

## UNIONS (CONNECTORS)

- Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N81-12283
- Universal connectors for joining stringers  
[NASA-CASE-LAR-12744-1] c 37 N81-31551

## UNLOADING

- Bootstrap unloader Patent  
[NASA-CASE-XNP-09768] c 09 N71-12516

## UNMANNED SPACECRAFT

- Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036

## UP-CONVERTERS

- Method and apparatus for quadrupole-shift-key and linear phase modulation  
[NASA-CASE-NPO-14444-1] c 33 N81-15192

## UPPER ATMOSPHERE

- Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699
- Apparatus for sampling particulates in gases  
[NASA-CASE-HQN-10037-1] c 14 N73-27376
- Rocket having banum release system to create ion clouds in the upper atmosphere  
[NASA-CASE-LAR-10670-2] c 15 N74-27360
- Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 46 N82-12685

## URANIUM 235

- Isotope separation using metallic vapor lasers  
[NASA-CASE-NPO-13550-1] c 36 N77-26477

## UREAS

- Aldehyde-containing urea-absorbing polysaccharides  
[NASA-CASE-NPO-13620-1] c 27 N77-30236
- Dialysis system — using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687
- Reverse osmosis membrane of high urea rejection properties — water purification  
[NASA-CASE-ARC-10980-1] c 27 N80-23452

## URETHANES

- Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104

## URINALYSIS

- Automated fluid chemical analyzer Patent  
[NASA-CASE-XNP-09451] c 06 N71-26754
- Method of detecting and counting bacteria in body fluids  
[NASA-CASE-GSC-11092-2] c 04 N73-27052
- Automatic instrument for chemical processing to detect microorganism in biological samples by measuring light reactions  
[NASA-CASE-GSC-11169-2] c 05 N73-32011
- Determination of antimicrobial susceptibilities on infected urines without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750

## URINATION

- Open type urine receptacle  
[NASA-CASE-MSC-12324-1] c 05 N72-22093
- Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N81-24711
- Urine collection apparatus — feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740

## URINE

- Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N78-27750

## UROLOGY

- Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N81-24711

## UTERUS

- Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

## UTILIZATION

- Hot melt recharge system  
[NASA-CASE-LAR-12881-1] c 27 N82-26464

## V

## V GROOVES

- Vee-notching device — with adjustable carriage  
[NASA-CASE-MFS-20730-1] c 39 N74-13131



Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N79-12321  
Rotary target V-block — aligning wind tunnel apparatus for optical measurement  
[NASA-CASE-LAR-12007-2] c 74 N79-25876  
High voltage V-groove solar cell  
[NASA-CASE-LEW-13401-2] c 44 N82-24717

**VACANCIES (CRYSTAL DEFECTS)**  
Bimetallic junctions  
[NASA-CASE-LEW-11573-1] c 26 N77-28265

**VACUUM**  
Depositing semiconductor films utilizing a thermal gradient  
[NASA-CASE-XKS-04614] c 15 N69-21460  
Superconducting magnet Patent  
[NASA-CASE-XNP-06503] c 23 N71-29049  
Thermocouples of molybdenum and indium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12174-2] c 35 N79-14346  
Bakeable McLeod gauge  
[NASA-CASE-XGS-01293-1] c 35 N79-33450

**VACUUM APPARATUS**  
Null-type vacuum microbalance Patent  
[NASA-CASE-XAC-00472] c 15 N70-40180  
Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256  
Apparatus for testing polymers materials Patent  
[NASA-CASE-XNP-09699] c 06 N71-24607  
Trap for preventing diffusion pump backstreaming  
[NASA-CASE-GSC-10518-1] c 15 N72-22489  
Inductance device with vacuum insulation  
[NASA-CASE-LEW-10330-1] c 09 N72-27226  
Apparatus for producing metal powders  
[NASA-CASE-XLE-06461-2] c 17 N72-28535  
Vacuum probe surface sampler  
[NASA-CASE-LAR-10623-1] c 14 N73-30395  
Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612  
Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c 37 N76-21554  
Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343  
Method and apparatus for supercooling and solidifying substances — containments melts and space processing  
[NASA-CASE-MFS-25242-1] c 35 N81-24413  
Head for high speed spinner having a vacuum chuck — holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482

**VACUUM CHAMBERS**  
High-vacuum condenser tank for ion rocket tests Patent  
[NASA-CASE-XLE-00168] c 11 N70-33278  
Split welding chamber Patent  
[NASA-CASE-LEW-11531] c 15 N71-14932  
Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c 11 N71-18773  
Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090  
Device for measuring light scattering wherein the measuring beam is successively reflected between a pair of parallel reflectors Patent  
[NASA-CASE-XER-11203] c 14 N71-28994  
Cryogenic feedthrough  
[NASA-CASE-LAR-10031] c 15 N72-22484  
Altitude simulation chamber for rocket engine testing  
[NASA-CASE-MFS-20620] c 11 N72-27262  
Evacuation valve  
[NASA-CASE-LAR-10061-1] c 15 N72-31483  
Method and apparatus for determining the contents of contained gas samples  
[NASA-CASE-GSC-10903-1] c 14 N73-12444  
Test stand system for vacuum chambers  
[NASA-CASE-MFS-21362] c 11 N73-20267  
Atomic hydrogen storage — cryotrapping and magnetic field strength  
[NASA-CASE-LEW-12081-2] c 28 N80-20402  
Containerless high temperature calorimeter apparatus  
[NASA-CASE-MFS-23923-1] c 35 N81-19426  
Hermetic seal for a shaft  
[NASA-CASE-NPO-15115-1] c 37 N82-24493  
Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-15670-1] c 33 N82-33634

**VACUUM DEPOSITION**  
A method for the deposition of beta-silicon carbide by isopitaxy  
[NASA-CASE-ERC-10120] c 26 N69-33482  
Vacuum deposition apparatus Patent  
[NASA-CASE-XMF-01667] c 15 N71-17647  
Evaporant source for vapor deposition Patent  
[NASA-CASE-XMF-06065] c 15 N71-20395

Vacuum evaporator with electromagnetic ion steering Patent  
[NASA-CASE-NPO-10331] c 09 N71-26701  
Preparation of dielectric coating of variable dielectric constant by plasma polymerization  
[NASA-CASE-ARC-10892-2] c 27 N79-14214  
Refractory coatings and method of producing the same  
[NASA-CASE-LEW-13169-1] c 26 N82-29415

**VACUUM EFFECTS**  
High power RF coaxial switch  
[NASA-CASE-NPO-14229-1] c 33 N80-18285

**VACUUM FURNACES**  
Apparatus for inserting and removing specimens from high temperature vacuum furnaces  
[NASA-CASE-LAR-10841-1] c 31 N74-27900

**VACUUM GAGES**  
Thermopile vacuum gage tube simulator Patent  
[NASA-CASE-XLA-02758] c 14 N71-18481  
Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c 14 N73-30390  
Ultrahigh vacuum measuring ionization gauge  
[NASA-CASE-XLA-05087] c 14 N73-30391  
In situ transfer standard for ultrahigh vacuum gage calibration  
[NASA-CASE-LAR-10862-1] c 35 N74-15092

**VACUUM MELTING**  
High temperature furnace for melting materials in space  
[NASA-CASE-MFS-20710] c 11 N72-23215

**VACUUM PUMPS**  
Pressure control valve — inflating flexible bladders  
[NASA-CASE-ARC-11251-1] c 37 N81-17433

**VACUUM SYSTEMS**  
Shrink-fit gas valve Patent  
[NASA-CASE-XGS-00587] c 15 N70-35087  
Cryogenic connector for vacuum use Patent  
[NASA-CASE-XGS-02441] c 15 N70-41629  
Ionization vacuum gauge with all but the end of the ion collector shielded Patent  
[NASA-CASE-XLA-07424] c 14 N71-18482  
Sorption vacuum trap Patent  
[NASA-CASE-XER-09519] c 14 N71-18483  
Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612

**VACUUM TUBES**  
Integrated structure vacuum tube  
[NASA-CASE-ARC-10445-1] c 31 N76-31365  
Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229

**VALUE**  
High impact pressure regulator Patent  
[NASA-CASE-NPO-10175] c 14 N71-18625

**VALVES**  
Valve actuator Patent  
[NASA-CASE-XHQ-01208] c 15 N70-35409  
Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492  
High pressure four-way valve Patent  
[NASA-CASE-XNP-00214] c 15 N70-36908  
Reinforcing means for diaphragms Patent  
[NASA-CASE-XNP-01962] c 32 N70-41370  
Multway vortex valve system Patent  
[NASA-CASE-XMF-04709] c 15 N71-15609  
Multiple orifice throttle valve Patent  
[NASA-CASE-XNP-09698] c 15 N71-18580  
High pressure air valve Patent  
[NASA-CASE-MSC-11010] c 15 N71-19485  
Valve seat with resilient support member Patent  
[NASA-CASE-XKS-02582] c 15 N71-21234  
Positive locking check valve Patent  
[NASA-CASE-XMS-09310] c 15 N71-22706  
Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191  
Valve seat  
[NASA-CASE-NPO-10606] c 15 N72-25451  
Evacuation valve  
[NASA-CASE-LAR-10061-1] c 15 N72-31483  
Flow control valve — for high temperature fluids  
[NASA-CASE-NPO-11951-1] c 37 N74-21065  
Airlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136  
Reciprocating engines  
[NASA-CASE-MSC-16239-1] c 37 N81-32510  
Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25640-1] c 52 N82-26962

**VANES**  
Solar vane actuator Patent  
[NASA-CASE-XNP-05355] c 14 N71-23040  
Rotary vane attenuator wherein rotor has orthogonally disposed resistive and dielectric cards  
[NASA-CASE-NPO-11418-1] c 14 N73-13420  
Amplified wind turbine apparatus  
[NASA-CASE-MFS-23830-1] c 44 N82-24639

Method of protecting a surface with a silicon-slurry/aluminate coating — coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441

**VAPOR DEPOSITION**  
A method for the deposition of beta-silicon carbide by isopitaxy  
[NASA-CASE-ERC-10120] c 26 N69-33482  
Apparatus for producing high purity silicon carbide crystals Patent  
[NASA-CASE-XLA-02057] c 26 N70-40015  
Method of changing the conductivity of vapor deposited gallium arsenide by the introduction of water into the vapor deposition atmosphere Patent  
[NASA-CASE-XNP-01961] c 26 N71-29156  
Tungsten contacts on silicon substrates  
[NASA-CASE-GSC-10695-1] c 09 N72-25259  
Deposition apparatus  
[NASA-CASE-LAR-10541-1] c 15 N72-32487  
Deposition of alloy films — on irregularly shaped metal object  
[NASA-CASE-LEW-11262-1] c 27 N74-13270  
System for depositing thin films  
[NASA-CASE-MFS-20775-1] c 31 N75-12161  
Vapor deposition apparatus — semiconductors and gallium arsenides  
[NASA-CASE-HQN-10462] c 25 N75-29192  
Chemical vapor deposition reactor — providing uniform film thickness  
[NASA-CASE-NPO-13650-1] c 25 N79-28253

**VAPOR PHASES**  
Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635  
Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027  
Fluid phase analyzer Patent  
[NASA-CASE-NPO-10691] c 14 N71-26199  
Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339

**VAPOR PRESSURE**  
Venting vapor apparatus Patent  
[NASA-CASE-XLE-00288] c 15 N70-34247  
Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023

**VAPOR TRAPS**  
Sorption vacuum trap Patent  
[NASA-CASE-XER-09519] c 14 N71-18483

**VAPORIZERS**  
Boiler for generating high quality vapor Patent  
[NASA-CASE-XLE-00785] c 33 N71-16104

**VAPORIZING**  
Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372  
Method for controlling vapor content of a gas  
[NASA-CASE-NPO-10633] c 03 N72-28025

**VARACTOR DIODE CIRCUITS**  
Phase modulator Patent  
[NASA-CASE-MSC-13201-1] c 07 N71-28429

**VARACTOR DIODES**  
Varactor high level mixer  
[NASA-CASE-XGS-02171] c 09 N69-24324  
Multiple varactor frequency doubler Patent  
[NASA-CASE-XMF-04958-1] c 10 N71-26414  
Millimeter wave pumped parametric amplifier  
[NASA-CASE-GSC-11617-1] c 33 N74-32660

**VARIABLE CYCLE ENGINES**  
Dual cycle aircraft turbine engine  
[NASA-CASE-LAR-11310-1] c 07 N77-28118  
Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384  
Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067

**VARIABLE GEOMETRY STRUCTURES**  
Landing arrangement for aerial vehicles Patent  
[NASA-CASE-XLA-00142] c 02 N70-33286  
Variable geometry wind tunnels  
[NASA-CASE-XLA-07430] c 11 N72-22246  
Aircraft engine nozzle  
[NASA-CASE-ARC-10977-1] c 07 N80-32392

**VARIABLE PITCH PROPELLERS**  
Dual output variable pitch turbofan actuation system  
[NASA-CASE-LEW-12419-1] c 07 N77-14025  
Impact absorbing blade mounts for variable pitch blades  
[NASA-CASE-LEW-12313-1] c 37 N78-10468

**VARIABLE SWEEP WINGS**  
Variable sweep wing configuration Patent  
[NASA-CASE-XLA-00230] c 02 N70-33255  
Variable sweep wing aircraft Patent  
[NASA-CASE-XLA-00221] c 02 N70-33266  
Variable-span aircraft Patent  
[NASA-CASE-XLA-00166] c 02 N70-34178  
Variable sweep aircraft wing Patent  
[NASA-CASE-XLA-00350] c 02 N70-38011



- Variable sweep aircraft Patent  
[NASA-CASE-XLA-03659] c 02 N71-11041
- Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005
- VARIABLE THRUST**
- Variable thrust ion engine utilizing thermally decomposable solid fuel Patent  
[NASA-CASE-XMF-00923] c 28 N70-36802
- Method for continuous variation of propellant flow and thrust in propulsive devices Patent  
[NASA-CASE-XLE-00177] c 28 N70-40367
- Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055
- VARIATIONS**
- Bidirectional step torque filter with zero backlash characteristics Patent  
[NASA-CASE-XGS-04227] c 15 N71-21744
- VECTOR ANALYSIS**
- Two force component measuring device Patent  
[NASA-CASE-XAC-04886-1] c 14 N71-20439
- VECTOCARDIOGRAPHY**
- Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189
- VEGETATION GROWTH**
- Rotary plant growth accelerating apparatus --- weightlessness  
[NASA-CASE-ARC-10722-1] c 51 N75-25503
- Remote sensing of vegetation and soil using microwave ellipsometry  
[NASA-CASE-GSC-11976-1] c 43 N78-10529
- Enhancement of in vitro Guayule propagation  
[NASA-CASE-NPO-15213-1] c 51 N81-29728
- VEHICLE WHEELS**
- Deformable vehicle wheel Patent  
[NASA-CASE-MFS-20400] c 31 N71-18611
- Resilient wheel Patent  
[NASA-CASE-MFS-13929] c 15 N71-27091
- Omnidirectional wheel  
[NASA-CASE-MFS-21309-1] c 37 N74-18125
- Two speed drive system --- mechanical device for changing speed on rotating vehicle wheel  
[NASA-CASE-MFS-20645-1] c 37 N74-23070
- Fifth wheel  
[NASA-CASE-FRC-10081-1] c 37 N77-14477
- Improved tire/wheel concept --- pneumatic aircraft tire  
[NASA-CASE-LAR-11695-2] c 37 N80-18402
- Tire/wheel concept  
[NASA-CASE-LAR-11695-2] c 37 N81-24443
- Suspension system for a wheel rolling on a flat track --- bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587
- VEHICLES**
- Magnetic suspension and pointing system  
[NASA-CASE-LAR-11889-2] c 37 N78-27424
- VEHICULAR TRACKS**
- Suspension system for a wheel rolling on a flat track --- bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587
- VELOCITY**
- Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895
- VELOCITY COUPLING**
- Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N82-26568
- VELOCITY MEASUREMENT**
- Micrometeoroid velocity measuring device Patent  
[NASA-CASE-XLA-00495] c 14 N70-41332
- Superconductive accelerometer Patent  
[NASA-CASE-XMF-01099] c 14 N71-15969
- Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587
- Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-MFS-20386] c 21 N71-19212
- Particle detection apparatus including a ballistic pendulum Patent  
[NASA-CASE-XMS-04201] c 14 N71-22990
- Angular velocity and acceleration measuring apparatus  
[NASA-CASE-ERC-10292] c 14 N72-25410
- Flow velocity and directional instrument  
[NASA-CASE-LAR-10855-1] c 14 N73-13415
- Doppler shift system --- system for measuring velocities of radiating particles  
[NASA-CASE-HQN-10740-1] c 72 N74-19310
- Tachometer  
[NASA-CASE-MFS-23175-1] c 35 N77-30436
- Velocity measurement system  
[NASA-CASE-MFS-23363-1] c 35 N78-32396
- Fluid velocity measuring device  
[NASA-CASE-LAR-11729-1] c 34 N79-12359
- Air speed and attitude probe  
[NASA-CASE-FRC-11009-1] c 06 N80-18036
- Method and apparatus for Delta K synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N82-28502
- VELOCITY MODULATION**
- Molecular beam velocity selector Patent  
[NASA-CASE-XLE-01533] c 11 N71-10777
- Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
[NASA-CASE-XGS-03532] c 14 N71-17627
- Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N80-19425
- VENTILATION**
- Protective garment ventilation system  
[NASA-CASE-XMS-04928] c 54 N78-17679
- Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288
- VENTILATORS**
- Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c 54 N75-27761
- VENTING**
- Venting vapor apparatus Patent  
[NASA-CASE-XLE-00288] c 15 N70-34247
- Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41646
- Valve seat with resilient support member Patent  
[NASA-CASE-XKS-02582] c 15 N71-21234
- Venting device for pressurized space suit helmet Patent  
[NASA-CASE-XMS-09652-1] c 05 N71-26333
- Solid propellant rocket motor  
[NASA-CASE-XNP-03282] c 28 N72-20758
- VENUS (PLANET)**
- Space simulator Patent  
[NASA-CASE-XNP-00459] c 11 N70-38675
- VERTICAL FLIGHT**
- Aircraft instrument Patent  
[NASA-CASE-XLA-00487] c 14 N70-40157
- VERTICAL LANDING**
- Landing gear Patent  
[NASA-CASE-XMF-01174] c 02 N70-41589
- VERTICAL ORIENTATION**
- Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 44 N82-29713
- VERTICAL TAKEOFF AIRCRAFT**
- Mechanical stability augmentation system Patent  
[NASA-CASE-XLA-06339] c 02 N71-13422
- Attitude controls for VTOL aircraft Patent  
[NASA-CASE-XAC-08972] c 02 N71-20570
- VERY HIGH FREQUENCIES**
- VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c 07 N71-24614
- VERY LONG BASE INTERFEROMETRY**
- System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603
- VESTS**
- Life preserver Patent  
[NASA-CASE-XMS-00864] c 05 N70-36493
- VIBRATION**
- Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694
- Active vibration isolator for flexible bodies Patent  
[NASA-CASE-LAR-10106-1] c 15 N71-27169
- VIBRATION DAMPING**
- Viscous pendulum damper Patent  
[NASA-CASE-LAR-10274-1] c 14 N71-17626
- Digital filter for reducing sampling jitter in digital control systems Patent  
[NASA-CASE-NPO-11088] c 08 N71-29034
- Turbo-machine blade vibration damper Patent  
[NASA-CASE-XLE-00155] c 28 N71-29154
- Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583
- Arrangement for damping the resonance in a laser diode  
[NASA-CASE-NPO-15980-1] c 36 N82-28618
- VIBRATION EFFECTS**
- Thermal detector of electromagnetic energy by means of a vibrating electrode Patent  
[NASA-CASE-XAC-10768] c 09 N71-18830
- Apparatus for recovering matter adhered to a host surface  
[NASA-CASE-NPO-11213] c 15 N73-20514
- Spherical bearing --- to reduce vibration effects  
[NASA-CASE-MFS-23447-1] c 37 N79-11404
- VIBRATION ISOLATORS**
- Variable stiffness polymeric damper  
[NASA-CASE-XAC-11225] c 14 N69-27486
- Miniature vibration isolator Patent  
[NASA-CASE-XLA-01019] c 15 N70-40156
- Vibration damping system Patent  
[NASA-CASE-XMS-01620] c 23 N71-15673
- Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243
- Dynamic vibration absorber Patent  
[NASA-CASE-LAR-10083-1] c 15 N71-27006
- Vibration isolation system using compression springs  
[NASA-CASE-NPO-11012] c 15 N72-11391
- Thrust-isolating mounting --- characteristics of support for loads mounted in spacecraft  
[NASA-CASE-MFS-21680-1] c 18 N74-27397
- Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c 37 N75-18573
- Thermal insulation attaching means --- adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221
- Shock isolator for operating a diode laser on a closed-cycle refrigerator  
[NASA-CASE-GSC-12297-1] c 37 N79-28549
- Decoupler pylon wing/store flutter suppressor  
[NASA-CASE-LAR-12468-1] c 08 N82-32373
- VIBRATION MEASUREMENT**
- Method and apparatus for measuring the damping characteristics of a structure  
[NASA-CASE-ARC-10154-1] c 14 N72-22440
- Method and apparatus for vibration analysis utilizing the Mossbauer effect  
[NASA-CASE-XMF-05882] c 35 N75-27329
- Displacement probes with self-contained exciting medium  
[NASA-CASE-LAR-11690-1] c 35 N80-14371
- Ride quality meter  
[NASA-CASE-LAR-12882-1] c 54 N81-31848
- VIBRATION METERS**
- Fiber optic vibration transducer and analyzer Patent  
[NASA-CASE-XMF-02433] c 14 N71-10616
- Ride quality meter  
[NASA-CASE-LAR-12882-1] c 54 N81-31848
- VIBRATION MODE**
- Function generator for synthesizing complex vibration mode patterns  
[NASA-CASE-LAR-10310-1] c 10 N73-20253
- VIBRATION SIMULATORS**
- Apparatus for vibrational testing of articles  
[NASA-CASE-GSC-11302-1] c 14 N73-13416
- VIBRATION TESTS**
- Peak acceleration limiter for vibrational tester Patent  
[NASA-CASE-NPO-10556] c 14 N71-27185
- Fixture for supporting articles during vibration tests  
[NASA-CASE-MFS-20523] c 14 N72-27412
- Apparatus for vibrational testing of articles  
[NASA-CASE-GSC-11302-1] c 14 N73-13416
- Multi axes vibration fixtures  
[NASA-CASE-MFS-20242] c 14 N73-19421
- Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12458-1] c 09 N81-31230
- VIBRATIONAL SPECTRA**
- Dynamic vibration absorber Patent  
[NASA-CASE-LAR-10083-1] c 15 N71-27006
- VIDEO COMMUNICATION**
- Means for generating a sync signal in an FM communication system Patent  
[NASA-CASE-XNP-10830] c 07 N71-11281
- Reduced bandwidth video communication system utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c 07 N71-23026
- Video communication system and apparatus Patent  
[NASA-CASE-NPO-06611] c 07 N71-26102
- Sampling video compression system  
[NASA-CASE-ARC-10984-1] c 32 N77-24328
- VIDEO DATA**
- Digital television camera control system Patent  
[NASA-CASE-XNP-01472] c 14 N70-41807
- Transient video signal recording with expanded playback Patent  
[NASA-CASE-ARC-10003-1] c 09 N71-25866
- Facsimile video remodulation network  
[NASA-CASE-GSC-10185-1] c 07 N72-12081
- Dual digital video switcher  
[NASA-CASE-KSC-10782-1] c 33 N75-30431
- Programmable scan/read circuitry for charge coupled device imaging detectors --- for a startracker  
[NASA-CASE-NPO-15345-1] c 33 N81-27403
- VIDEO EQUIPMENT**
- Television signal processing system Patent  
[NASA-CASE-NPO-10140] c 07 N71-24742
- Video sync processor Patent  
[NASA-CASE-KSC-10002] c 10 N71-25865
- Video communication system and apparatus Patent  
[NASA-CASE-XNP-06611] c 07 N71-26102
- Video signal enhancement system with dynamic range compression and modulation index expansion Patent  
[NASA-CASE-NPO-10343] c 07 N71-27341
- Broadband video process with very high input impedance  
[NASA-CASE-NPO-10199] c 09 N72-17156
- Electronic video editor  
[NASA-CASE-KSC-10003] c 10 N73-13235



- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-1] c 07 N73-22076
- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c 35 N76-16391
- Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17656
- Television camera video level control system — space shuttle orbiters  
[NASA-CASE-MSC-18578-1] c 74 N82-27121
- VIDICONS**  
Method of erasing target material of a vidicon tube or the like Patent  
[NASA-CASE-XNP-06028] c 09 N71-23189
- Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036
- VIEWING**  
Real-time 3D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N82-10862
- VINYL POLYMERS**  
Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
[NASA-CASE-NPO-10373] c 03 N71-18698
- Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-1] c 27 N78-32256
- Compound oxidized styrylphosphine — flame resistant vinyl polymers  
[NASA-CASE-MSC-14903-2] c 27 N80-10358
- Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-3] c 27 N80-24438
- VINYLDIENE**  
Dicyanocetylene polymers Patent  
[NASA-CASE-XNP-03250] c 06 N71-23500
- VIRUSES**  
Water system virus detection  
[NASA-CASE-MSC-16098-1] c 51 N79-10693
- VISCOELASTICITY**  
Resilience testing device Patent  
[NASA-CASE-XLA-08254] c 14 N71-26161
- Parallel-plate viscometer with double diaphragm suspension  
[NASA-CASE-NPO-11387] c 14 N73-14429
- Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c 37 N75-18573
- Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104
- VISCOMETERS**  
Parallel plate viscometer Patent  
[NASA-CASE-XNP-09462] c 14 N71-17584
- Parallel-plate viscometer with double diaphragm suspension  
[NASA-CASE-NPO-11387] c 14 N73-14429
- VISCOSITY**  
Low viscosity magnetic fluid obtained by the colloidal suspension of magnetic particles Patent  
[NASA-CASE-XLE-01512] c 12 N70-40124
- Viscosity measuring instrument  
[NASA-CASE-NPO-14501-1] c 35 N80-18357
- VISCOUS DAMPING**  
Variable stiffness polymenc damper  
[NASA-CASE-XAC-11225] c 14 N69-27486
- Viscous pendulum-damper Patent  
[NASA-CASE-XLA-02079] c 12 N71-16894
- Viscous pendulum damper Patent  
[NASA-CASE-LAR-10274-1] c 14 N71-17626
- Multiple plate hydrostatic viscous damper  
[NASA-CASE-LEW-12445-1] c 37 N81-22360
- VISIBILITY**  
Controlled visibility device for an aircraft Patent  
[NASA-CASE-XFR-04147] c 11 N71-10748
- Reusable captive blind fastener  
[NASA-CASE-MSC-18742-1] c 37 N82-26673
- VISIBLE SPECTRUM**  
Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059
- VISORS**  
Anti-fog composition — for prevention of fogging on surfaces such as space helmet visors and windshields  
[NASA-CASE-MSC-13530-2] c 23 N75-14834
- VISUAL ACUITY**  
Multiparameter vision testing apparatus  
[NASA-CASE-MSC-13601-2] c 54 N75-27759
- VISUAL CONTROL**  
Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c 31 N69-27499
- Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059
- VISUAL FIELDS**  
Visual examination apparatus  
[NASA-CASE-ARC-10329-1] c 05 N73-26072
- Visual examination apparatus  
[US-PATENT-RE-28,921] c 52 N76-30793
- Binocular device for displaying numerical information in field of view  
[NASA-CASE-LAR-11782-1] c 74 N77-20882
- VISUAL OBSERVATION**  
Automatic visual inspection system for microelectronics  
[NASA-CASE-NPO-13282] c 38 N78-17396
- VISUAL PERCEPTION**  
Liquid flow sight assembly Patent  
[NASA-CASE-XLE-02998] c 14 N70-42074
- VISUAL STIMULI**  
Reaction tester  
[NASA-CASE-MSC-13604-1] c 05 N73-13114
- VOICE COMMUNICATION**  
Position location system and method Patent  
[NASA-CASE-GSC-10087-2] c 21 N71-13958
- Satellite communication system and method Patent  
[NASA-CASE-GSC-10118-1] c 07 N71-24621
- Protective suit having an audio transceiver Patent  
[NASA-CASE-KSC-10164] c 07 N71-33108
- Technique for recovery of voice data from heat damaged magnetic tape  
[NASA-CASE-MSC-14219-1] c 32 N74-27612
- Filtering device — removing electromagnetic noise from voice communication signals  
[NASA-CASE-MFS-22729-1] c 32 N76-21366
- Real time analysis of voiced sounds  
[NASA-CASE-NPO-13465-1] c 32 N76-31372
- Satellite personal communications system  
[NASA-CASE-NPO-14480-1] c 32 N80-20448
- VOICE DATA PROCESSING**  
Digital communication system  
[NASA-CASE-MSC-13912-1] c 32 N74-30524
- VOLATILITY**  
Apparatus for testing polymenc materials Patent  
[NASA-CASE-XNP-09699] c 06 N71-24607
- VOLT-AMPERE CHARACTERISTICS**  
Voltage-current characteristic simulator Patent  
[NASA-CASE-XMS-01554] c 10 N71-10578
- The dc-to-dc converters employing staggered-phase power switches with two-loop control  
[NASA-CASE-NPO-13512-1] c 33 N77-10428
- Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18193
- VOLTAGE AMPLIFIERS**  
Electronic amplifier with power supply switching Patent  
[NASA-CASE-XMS-00945] c 09 N71-10798
- Bootstrap unloader Patent  
[NASA-CASE-XNP-09768] c 09 N71-12516
- Active RC networks  
[NASA-CASE-ARC-10020] c 10 N72-17172
- Wide range analog-to-digital converter with a variable gain amplifier  
[NASA-CASE-NPO-11018] c 08 N72-21200
- Voltage feed through apparatus having reduced partial discharge  
[NASA-CASE-GSC-12347-1] c 33 N80-18286
- VOLTAGE CONVERTERS (DC TO DC)**  
Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10792-1] c 33 N74-11049
- The dc-to-dc converters employing staggered-phase power switches with two-loop control  
[NASA-CASE-NPO-13512-1] c 33 N77-10428
- Inrush current limiter  
[NASA-CASE-GSC-11789-1] c 33 N77-14333
- Phase substitution of spare converter for a failed one of parallel phase staggered converters  
[NASA-CASE-NPO-13812-1] c 33 N77-30365
- Regulated high efficiency, lightweight capacitor-diode multiplier dc to dc converter  
[NASA-CASE-LEW-12791-1] c 33 N78-32341
- Buck/boost regulator  
[NASA-CASE-GSC-12360-1] c 33 N81-19392
- Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393
- Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404
- Power converter  
[NASA-CASE-FRC-11014-1] c 33 N82-18494
- Simplified dc to dc converter  
[NASA-CASE-LEW-13495-1] c 33 N82-24432
- A dc to dc converter — raising battery voltage in an ion propulsion system  
[NASA-CASE-MFS-25430-1] c 33 N82-28550
- VOLTAGE GENERATORS**  
Pulsed energy power system Patent  
[NASA-CASE-MSC-13112] c 03 N71-11057
- Telemeter adaptable for implanting in an animal Patent  
[NASA-CASE-XAC-05706] c 05 N71-12342
- Multiple slope sweep generator Patent  
[NASA-CASE-XMS-03542] c 09 N71-28926
- Controllable load insensitive power converters  
[NASA-CASE-ERC-10268] c 09 N72-25252
- Driver for solar cell I-V characteristic plots  
[NASA-CASE-NPO-14096-1] c 44 N80-18551
- Adaptive reference voltage generator for firing angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N81-31481
- VOLTAGE REGULATORS**  
Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c 03 N69-21330
- Power control circuit  
[NASA-CASE-XNP-02713] c 10 N69-39888
- Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986
- Bus voltage compensation circuit for controlling direct current motor  
[NASA-CASE-XMS-04215-1] c 09 N69-39987
- Regulated power supply Patent  
[NASA-CASE-XMS-01991] c 09 N71-21449
- High voltage divider system Patent  
[NASA-CASE-XLE-02008] c 09 N71-21583
- Power supply circuit Patent  
[NASA-CASE-XMS-00913] c 10 N71-23543
- Voltage to frequency converter Patent  
[NASA-CASE-GSC-10022-1] c 10 N71-25882
- Buck boost voltage regulation circuit Patent  
[NASA-CASE-GSC-10735-1] c 10 N71-26085
- Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c 14 N71-26244
- Voltage regulator with plural parallel power source sections Patent  
[NASA-CASE-GSC-10891-1] c 10 N71-26626
- Maximum power point tracker Patent  
[NASA-CASE-GSC-10376-1] c 14 N71-27407
- High power microwave power divider Patent  
[NASA-CASE-NPO-11031] c 07 N71-33606
- Reference voltage switching unit  
[NASA-CASE-NPO-11253] c 09 N72-17157
- Switching regulator  
[NASA-CASE-LEW-11005-1] c 09 N72-21243
- Controllable load insensitive power converters  
[NASA-CASE-ERC-10268] c 09 N72-25252
- Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10792-1] c 33 N74-11049
- Overvoltage protection network  
[NASA-CASE-ARC-10197-1] c 33 N74-17929
- Low distortion automatic phase control circuit — voltage controlled phase shifter  
[NASA-CASE-MFS-21671-1] c 33 N74-22885
- Voltage monitoring system  
[NASA-CASE-KSC-10736-1] c 33 N75-19521
- Transformer regulated self-stabilizing chopper  
[NASA-CASE-XGS-09186] c 33 N78-17295
- Voltage regulator for battery power source — using a bipolar transistor  
[NASA-CASE-FRC-10116-1] c 33 N79-23345
- Buck/boost regulator  
[NASA-CASE-GSC-12360-1] c 33 N81-19392
- Motor power factor controller with a reduced voltage starter  
[NASA-CASE-MFS-25586-1] c 33 N82-11360
- Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418
- VOLTMETERS**  
Voltage monitoring system  
[NASA-CASE-KSC-10736-1] c 33 N75-19521
- VOLUMETRIC ANALYSIS**  
Volumetric direct nuclear pumped laser  
[NASA-CASE-LAR-12183-1] c 36 N79-18307
- VOMITING**  
Venting device for pressurized space suit helmet Patent  
[NASA-CASE-XMS-09652-1] c 05 N71-26333
- VORTEX BREAKDOWN**  
Wingtip vortex dissipator for aircraft  
[NASA-CASE-LAR-11645-1] c 02 N77-10001
- VORTEX FLAPS**  
Leading edge vortex flaps for drag reduction — during subsonic flight  
[NASA-CASE-LAR-12750-1] c 02 N81-19016
- Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-1] c 05 N82-25240
- VORTEX GENERATORS**  
Multitube vortex valve system Patent  
[NASA-CASE-XMF-04709] c 15 N71-15609
- Vortex generator for controlling the dispersion of effluents in a flowing liquid  
[NASA-CASE-LAR-12045-1] c 34 N77-24423
- Wingtip vortex turbine  
[NASA-CASE-LAR-12544-1] c 07 N81-27096
- VORTICES**  
Vortex-lift roll-control device  
[NASA-CASE-LAR-11868-2] c 08 N79-14108



## VULCANIZING

- Method for compression molding of thermosetting plastics utilizing a temperature gradient across the plastic to cure the article  
[NASA-CASE-LAR-10489-1] c 31 N74-18124

## W

## WAFERS

- Apparatus and method for separating a semiconductor wafer Patent  
[NASA-CASE-ERC-10138] c 26 N71-14354
- Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
[NASA-CASE-MFS-23315-1] c 76 N78-24950
- System for slicing silicon wafers  
[NASA-CASE-NPO-14406-1] c 37 N80-29703
- Scriber for silicon wafers  
[NASA-CASE-NPO-15539-1] c 37 N82-11469
- Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N82-26629
- Improved ingot slicing machine  
[NASA-CASE-NPO-15483-1] c 37 N82-28642
- Method of fabricating Schottky Barner solar cell  
[NASA-CASE-NPO-13689-4] c 44 N82-28780
- Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709
- High voltage planar multijunction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764
- Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-15670-1] c 33 N82-33634

## WALL TEMPERATURE

- Method of making apparatus for sensing temperature  
[NASA-CASE-XLE-05230-2] c 14 N73-13417
- Structural heat pipe --- for spacecraft wall thermal insulation system  
[NASA-CASE-GSC-11619-1] c 34 N75-12222
- Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523
- Curved film cooling admission tube  
[NASA-CASE-LEW-13174-1] c 34 N81-12363

## WALLS

- Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411

## WANKEL ENGINES

- Real time pressure signal system for a rotary engine  
[NASA-CASE-LEW-13622-1] c 07 N82-26294

## WARNING SYSTEMS

- Out of tolerance warning alarm system for plurality of monitored circuits Patent  
[NASA-CASE-XMS-10984-1] c 10 N71-19417
- Unsaturating saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24893
- Electrical apparatus for detection of thermal decomposition of insulation Patent  
[NASA-CASE-XMF-03968] c 14 N71-27186
- Combustion products generating and metering device  
[NASA-CASE-GSC-11095-1] c 14 N72-10375
- Stacked array of omnidirectional antennas  
[NASA-CASE-LAR-10545-1] c 09 N72-21244
- Display research collision warning system  
[NASA-CASE-HQN-10703] c 21 N73-13643
- System for indicating direction of intruder aircraft  
[NASA-CASE-ERC-10226-1] c 14 N73-16483
- Silent emergency alarm system for schools and the like  
[NASA-CASE-NPO-11307-1] c 10 N73-30205
- Apparatus for aiding a pilot in avoiding a midair collision between aircraft  
[NASA-CASE-LAR-10717-1] c 21 N73-30641
- Inverter ratio failure detector  
[NASA-CASE-NPO-13160-1] c 35 N74-18090
- Hearing aid malfunction detection system  
[NASA-CASE-MS-14916-1] c 33 N78-10375
- Automatic communication signal monitoring system  
[NASA-CASE-NPO-13941-1] c 32 N79-10262
- Passive intrusion detection system  
[NASA-CASE-NPO-13804-1] c 33 N80-23559
- Intrusion detection method and apparatus --- monitoring unwanted subterranean entry and departure  
[NASA-CASE-ARC-11317-1] c 35 N81-19430

## WASHING

- Method of neutralizing the corrosive surface of amine-cured epoxy resins  
[NASA-CASE-GSC-12686-1] c 27 N82-10227

## WASTE DISPOSAL

- Relief container  
[NASA-CASE-XMS-06761] c 05 N69-23192
- An airlock  
[NASA-CASE-MFS-20922] c 31 N72-20840
- Liquid waste feed system  
[NASA-CASE-LAR-10365-1] c 05 N72-27102
- Reduced gravity fecal collector seat and unnaal  
[NASA-CASE-MFS-22102-1] c 54 N74-20725

- Airlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136
- Automatic liquid inventory collecting and dispensing unit  
[NASA-CASE-LAR-11071-1] c 35 N75-19611
- Automatic biowaste sampling  
[NASA-CASE-MS-14640-1] c 54 N76-14804
- Method and system for nuclear waste disposal --- control valves for encapsulating wastes  
[NASA-CASE-NPO-15454-1] c 73 N82-12916
- Absorbent product and articles made therefrom  
[NASA-CASE-MS-18223-2] c 52 N82-26960

## WASTE ENERGY UTILIZATION

- Automotive absorption air conditioner utilizing solar and motor waste heat  
[NASA-CASE-NPO-15183-1] c 44 N82-26776

## WASTE UTILIZATION

- Simultaneous treatment of SO<sub>2</sub> containing stack gases and waste water  
[NASA-CASE-MS-16258-1] c 45 N79-12584

## WASTE WATER

- Water system virus detection  
[NASA-CASE-MS-16098-1] c 51 N79-10693
- Process for purification of waste water produced by a Kraft process pulp and paper mill  
[NASA-CASE-NPO-13847-2] c 85 N79-17747
- Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10-1] c 25 N82-25335

## WATER

- High power-high voltage waterload Patent  
[NASA-CASE-XNP-05381] c 09 N71-20842
- Procedure and apparatus for determination of water in nitrogen tetroxide  
[NASA-CASE-NPO-10234] c 06 N72-17094
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-1] c 37 N76-16446
- Solar hydrogen generator  
[NASA-CASE-LAR-11361-1] c 44 N77-22607
- Remote water monitoring system  
[NASA-CASE-LAR-11973-1] c 35 N78-27384
- Solar photolysis of water  
[NASA-CASE-NPO-14126-1] c 44 N79-11470

## WATER FLOW

- Potable water dispenser  
[NASA-CASE-MFS-21115-1] c 54 N74-12779

## WATER INJECTION

- Reentry communication by maternal addition Patent  
[NASA-CASE-XLA-01552] c 07 N71-11284

## WATER LANDING

- Vehicle parachute and equipment jettison system Patent  
[NASA-CASE-XLA-00195] c 02 N70-38009
- Emergency earth orbital escape device  
[NASA-CASE-MS-13281] c 31 N72-18859

## WATER MANAGEMENT

- Water management system and an electrolytic cell therefor Patent  
[NASA-CASE-MS-10960-1] c 03 N71-24718
- Solar-powered pump  
[NASA-CASE-NPO-13567-1] c 44 N76-29701
- Water POLLUTION
- Compact solar still Patent  
[NASA-CASE-XMS-04533] c 15 N71-23086
- Bacterial contamination monitor  
[NASA-CASE-GSC-10879-1] c 14 N72-25413
- Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MS-16777-1] c 51 N80-27067

## WATER QUALITY

- Rapid, quantitative determination of bacteria in water  
[NASA-CASE-GSC-12158-1] c 51 N78-22585
- Fluid sample collection and distribution system --- qualitative analysis of aqueous samples from several points  
[NASA-CASE-MS-16841-1] c 34 N79-24285
- Method and apparatus for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N82-12739
- Saltless solar pond  
[NASA-CASE-NPO-15808-1] c 44 N82-29714

## WATER RECLAMATION

- Recovery of potable water from human wastes in below-G conditions Patent  
[NASA-CASE-XLA-03213] c 05 N71-11207
- Water system virus detection  
[NASA-CASE-MS-16098-1] c 51 N79-10693
- Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345

## WATER RESOURCES

- Radar target for remotely sensing hydrological phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498

## WATER TEMPERATURE

- Differential temperature transducer Patent  
[NASA-CASE-XAC-00812] c 14 N71-15598

## WATER TREATMENT

- Water management system and an electrolytic cell therefor Patent  
[NASA-CASE-MS-10960-1] c 03 N71-24718
- Method of preparing water purification membranes --- polymerization of allyl amine as thin films in plasma discharge  
[NASA-CASE-ARC-10643-1] c 25 N75-12087
- Iodine generator for reclaimed water purification  
[NASA-CASE-MS-14632-1] c 54 N78-14784
- Water system virus detection  
[NASA-CASE-MS-16098-1] c 51 N79-10693
- Simultaneous treatment of SO<sub>2</sub> containing stack gases and waste water  
[NASA-CASE-MS-16258-1] c 45 N79-12584
- Process for purification of waste water produced by a Kraft process pulp and paper mill  
[NASA-CASE-NPO-13847-2] c 85 N79-17747
- Ozonation of cooling tower waters  
[NASA-CASE-NPO-14340-1] c 45 N80-14579
- Reverse osmosis membrane of high urea rejection properties --- water purification  
[NASA-CASE-ARC-10980-1] c 27 N80-23452
- Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076
- Sewage sludge additive  
[NASA-CASE-NPO-13877-1] c 45 N82-11634
- Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10-1] c 25 N82-25335

## WATER VAPOR

- Vapor pressure measuring system and method Patent  
[NASA-CASE-XMS-01618] c 14 N71-20741
- Cell and method for electrolysis of water and anode  
[NASA-CASE-MS-16394-1] c 28 N81-24280

## WATER WAVES

- Surface roughness measuring system --- synthetic aperture radar measurements of ocean wave height and terrain peaks  
[NASA-CASE-NPO-13862-1] c 35 N79-10391
- Oceanic wave measurement system  
[NASA-CASE-MFS-23862-1] c 48 N80-18667

## WATERPROOFING

- Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063

## WATERWAVE ENERGY CONVERSION

- Natural turbulence electrical power generator --- using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834

## WAVE AMPLIFICATION

- Distributed feedback acoustic surface wave oscillator  
[NASA-CASE-NPO-13673-1] c 71 N77-26919

## WAVE DIFFRACTION

- Diffraction grating configuration for X-ray and ultraviolet focusing  
[NASA-CASE-GSC-12357-1] c 74 N80-21140

## WAVE FRONT RECONSTRUCTION

- Recording and reconstructing focused image holograms Patent  
[NASA-CASE-ERC-10017] c 16 N71-15567

## WAVE GENERATION

- Wind tunnel airstream oscillating apparatus Patent  
[NASA-CASE-XLA-00112] c 11 N70-33287
- Linear sawtooth voltage-wave generator employing transistor timing circuit having capacitor-zener diode combination feedback Patent  
[NASA-CASE-XMS-01315] c 09 N70-41675
- Waveform simulator Patent  
[NASA-CASE-NPO-10251] c 10 N71-27365
- Wide band doubler and sine wave quadrature generator  
[NASA-CASE-NPO-11133] c 10 N72-20223
- Material suspension within an acoustically excited resonant chamber --- at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774

## WAVE INTERACTION

- Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N82-26568

## WAVE PROPAGATION

- Maser amplifier slow wave structure --- detecting weak signals from spacecraft  
[NASA-CASE-NPO-15211-1] c 36 N81-24425

## WAVE REFLECTION

- Microwave flaw detector Patent  
[NASA-CASE-ARC-10009-1] c 15 N71-17822
- Millimeter wave antenna system Patent Application  
[NASA-CASE-GSC-10949-1] c 07 N71-28965

## WAVE SCATTERING

- Device and method for determining X ray reflection efficiency of optical surfaces  
[NASA-CASE-MFS-20243] c 23 N73-13662



## WAVEFORMS

- Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00131] c 09 N70-38995
- Single or joint amplitude distribution analyzer Patent  
[NASA-CASE-XNP-01383] c 09 N71-10659
- Peak polarity selector Patent  
[NASA-CASE-FRC-10010] c 10 N71-24862
- Family of frequency to amplitude converters  
[NASA-CASE-MSC-12395] c 09 N72-25257
- Apparatus for statistical time-series analysis of electrical signals  
[NASA-CASE-MSC-12428-1] c 10 N73-25240
- Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MSC-14557-1] c 32 N76-16249
- Speech analyzer  
[NASA-CASE-GSC-11898-1] c 32 N77-30309
- Lightning current waveform measuring system  
[NASA-CASE-KSC-11018-1] c 33 N79-10337
- WAVEGUIDE ANTENNAS**  
Virtual wall slot circularly polarized planar array antenna  
[NASA-CASE-NPO-10301] c 07 N72-11148
- WAVEGUIDE FILTERS**  
High power microwave power divider Patent  
[NASA-CASE-NPO-11031] c 07 N71-33606
- WAVEGUIDE LASERS**  
Tunable injection-locked pulsed CO<sub>2</sub> laser  
[NASA-CASE-NPO-14984-1] c 36 N81-15350
- WAVEGUIDE WINDOWS**  
Broadband microwave waveguide window Patent  
[NASA-CASE-XNP-08880] c 09 N71-24808
- WAVEGUIDES**  
Dual waveguide mode source having control means for adjusting the relative amplitude of two modes Patent  
[NASA-CASE-XNP-03134] c 07 N71-10676
- Folded traveling wave maser structure Patent  
[NASA-CASE-XNP-05219] c 16 N71-15550
- Quasi-optical microwave component Patent  
[NASA-CASE-ERC-10011] c 07 N71-29065
- Waveguide mixer  
[NASA-CASE-ERC-10179] c 07 N72-20141
- Active microwave inses and windows  
[NASA-CASE-LAR-10513-1] c 07 N72-25170
- Thin film microwave ins  
[NASA-CASE-LAR-10511-1] c 09 N72-29172
- Resonant waveguide stark cell --- using microwave spectrometers  
[NASA-CASE-LAR-11352-1] c 33 N75-26245
- Diffused waveguiding capillary tube with distributed feedback for a gas laser  
[NASA-CASE-NPO-13544-1] c 36 N76-18428
- Dielectric-loaded waveguide circulator for cryogenically cooled and cascaded maser waveguide structures  
[NASA-CASE-NPO-14254-1] c 36 N80-18372
- Support assembly for cryogenically coolable low-noise choke waveguide  
[NASA-CASE-NPO-14253-1] c 32 N80-32605
- Coaxial phased array antenna  
[NASA-CASE-MSC-16800-1] c 32 N81-14187
- Ladder supported nng bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N81-24348
- Maser amplifier slow wave structure --- detecting weak signals from spacecraft  
[NASA-CASE-NPO-15211-1] c 36 N81-24425
- Waveguide cooling system  
[NASA-CASE-NPO-15401-1] c 33 N81-29344
- Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N82-26568
- WAVELENGTHS**  
Method and apparatus for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c 16 N69-31343
- Instrument for the quantitative measurement of radiation at multiple wave lengths Patent  
[NASA-CASE-XLE-00011] c 14 N70-41946
- Optical systems having spatially invariant outputs  
[NASA-CASE-ERC-10248] c 14 N72-17323
- Two color horizon sensor  
[NASA-CASE-ERC-10174] c 14 N72-25409
- Monitoring deposition of films  
[NASA-CASE-MFS-20675] c 26 N73-26751
- Dual wavelength scanning Doppler velocimeter --- without perturbation of flow fields  
[NASA-CASE-ARC-10637-1] c 35 N75-16783
- Diatomic infrared gasdynamic laser --- for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c 36 N75-31426
- Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N81-19440
- Fluorescent radiation converter  
[NASA-CASE-GSC-12528-1] c 74 N81-24900
- Acoustic suspension system  
[NASA-CASE-NPO-15435-1] c 71 N81-27887

- Extended range X-ray telescope  
[NASA-CASE-MFS-25282-1] c 89 N81-34122
- Acoustic levitation methods and apparatus  
[NASA-CASE-NPO-15562-1] c 71 N82-27086
- WAVES**  
Natural turbulence electrical power generator --- using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834
- WEAR**  
Refractory coatings  
[NASA-CASE-LEW-13169-2] c 26 N82-30371
- WEAR INHIBITORS**  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540
- WEATHERPROOFING**  
Weatherproof helix antenna Patent  
[NASA-CASE-XKS-08485] c 07 N71-19493
- WEBS (SHEETS)**  
Method and apparatus for measuring web material wound on a reel  
[NASA-CASE-GSC-11902-1] c 38 N77-17495
- Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484
- WEBS (SUPPORTS)**  
Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-2] c 07 N78-18066
- Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-3] c 07 N79-14096
- WEDGES**  
Two dimensional wedge/translating shroud nozzle  
[NASA-CASE-LAR-11919-1] c 07 N78-27121
- Interlocking wedge joint  
[NASA-CASE-LAR-12729-1] c 37 N82-26676
- WEIGHT (MASS)**  
Suspended mass impact damper Patent  
[NASA-CASE-LAR-10193-1] c 15 N71-27146
- WEIGHT INDICATORS**  
Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c 35 N74-26945
- WEIGHT MEASUREMENT**  
Automatic force measuring system Patent  
[NASA-CASE-XLA-02605] c 14 N71-10773
- Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c 35 N74-26945
- WEIGHTLESSNESS**  
Apparatus for transferring cryogenic liquids Patent  
[NASA-CASE-XLE-00345] c 15 N70-38020
- Liquid-gas separation system Patent  
[NASA-CASE-XMS-01624] c 15 N70-40062
- Measuring device Patent  
[NASA-CASE-XMS-01546] c 14 N70-40233
- Zero gravity starting means for liquid propellant motors Patent  
[NASA-CASE-XNP-01390] c 28 N70-41275
- Liquid-gas separator for zero gravity environment Patent  
[NASA-CASE-XMS-01492] c 05 N70-41297
- Recovery of potable water from human wastes in below-G conditions Patent  
[NASA-CASE-XLA-03213] c 05 N71-11207
- Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968
- Reduced gravity simulator Patent  
[NASA-CASE-XLA-01787] c 11 N71-16028
- Method and apparatus of simulating zero gravity conditions Patent  
[NASA-CASE-MFS-12750] c 27 N71-16223
- Quick disconnect latch and handle combination Patent  
[NASA-CASE-MFS-11132] c 15 N71-17649
- Spherical tank gauge Patent  
[NASA-CASE-XMS-06236] c 14 N71-21007
- Zero gravity apparatus Patent  
[NASA-CASE-XMF-06515] c 14 N71-23227
- Skeletal stressing method and apparatus Patent  
[NASA-CASE-ARC-10100-1] c 05 N71-24738
- Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036
- Method of making foamed materials in zero gravity  
[NASA-CASE-XMF-09902] c 15 N72-11387
- Remote control manipulator for zero gravity environment  
[NASA-CASE-MFS-14405] c 15 N72-28495
- Zero gravity liquid mixer  
[NASA-CASE-LAR-10195-1] c 15 N73-19458
- Zero gravity liquid transfer screen  
[NASA-CASE-KSC-10626] c 14 N73-27378
- Reduced gravity fecal collector seat and urinal  
[NASA-CASE-MFS-22102-1] c 54 N74-20725
- Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c 34 N74-27744

- Rotary plant growth accelerating apparatus --- weightlessness  
[NASA-CASE-ARC-10722-1] c 51 N75-25503
- Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c 34 N75-26282
- Method for manufacturing mirrors in zero gravity environment  
[NASA-CASE-MSC-12611-1] c 12 N76-15189
- Fluid mass sensor for a zero gravity environment  
[NASA-CASE-MSC-14653-1] c 35 N77-19385
- Method of crystallization --- in gravity-free environments  
[NASA-CASE-MFS-23001-1] c 76 N77-32919
- Passive propellant system  
[NASA-CASE-MSC-23642-1] c 20 N80-10278
- Method and apparatus for producing concentric hollow spheres --- inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319
- WEIGHTLESSNESS SIMULATION**  
Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988
- Mass measuring system Patent  
[NASA-CASE-XMS-03371] c 05 N70-42000
- Harness assembly Patent  
[NASA-CASE-MFS-14671] c 05 N71-12341
- Whole body measurement systems --- for weightlessness simulation  
[NASA-CASE-MSC-13972-1] c 52 N74-10975
- WELD STRENGTH**  
Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c 37 N75-19683
- WELD TESTS**  
Determination of spot weld quality Patent  
[NASA-CASE-XNP-02588] c 15 N71-18613
- Method and apparatus for swept-frequency impedance measurements of welds  
[NASA-CASE-ARC-10176-1] c 15 N72-21464
- WELDED JOINTS**  
Apparatus for welding blades to rotors  
[NASA-CASE-LEW-10533-2] c 37 N74-11300
- Ultrasonic scanning system for in-place inspection of brazed tube joints  
[NASA-CASE-MFS-20767-1] c 38 N74-15130
- Device for measuring the ferrite content in an austenitic stainless-steel weld  
[NASA-CASE-MFS-22907-1] c 26 N76-18257
- Capillary flow weld-bonding  
[NASA-CASE-LAR-11726-1] c 37 N76-27568
- WELDED STRUCTURES**  
Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c 37 N75-19683
- Flanged major modular assembly jig  
[NASA-CASE-MSC-19372-1] c 39 N76-31562
- Weld-bonded titanium structures  
[NASA-CASE-LAR-11549-1] c 37 N77-11397
- Bimetallic junctions  
[NASA-CASE-LEW-11573-1] c 26 N77-28265
- WELDING**  
Segmented back-up bar Patent  
[NASA-CASE-XMF-00640] c 15 N70-39924
- Flexible back-up bar Patent  
[NASA-CASE-XMF-00722] c 15 N70-40204
- Apparatus for welding sheet material --- butt joints  
[NASA-CASE-XMS-01330] c 37 N75-27376
- Weld-bonded titanium structures  
[NASA-CASE-LAR-11549-1] c 37 N77-11397
- Method and apparatus for holding two separate metal pieces together for welding  
[NASA-CASE-GSC-12318-1] c 37 N80-23655
- WELDING MACHINES**  
Apparatus for welding torch angle and seam tracking control Patent  
[NASA-CASE-XMF-03287] c 15 N71-15607
- Automatic welding speed controller Patent  
[NASA-CASE-XMF-01730] c 15 N71-23050
- Electric welding torch Patent  
[NASA-CASE-XMF-02330] c 15 N71-23798
- Welding skate with computerized control Patent  
[NASA-CASE-XMF-07069] c 15 N71-23815
- Computerized system for translating a torch head  
[NASA-CASE-MFS-23620-1] c 37 N79-10421
- WET CELLS**  
Method and device for determining battery state of charge Patent  
[NASA-CASE-NPO-10194] c 03 N71-20407
- WETTING**  
Pretreatment method for anti-wettable materials  
[NASA-CASE-XMS-03537] c 15 N69-21471
- WHEATSTONE BRIDGES**  
Self-balancing strain gage transducer Patent  
[NASA-CASE-MFS-12827] c 14 N71-17656
- Method for improving the signal-to-noise ratio of the Wheatstone bridge type bolometer Patent  
[NASA-CASE-XLA-02810] c 14 N71-25901



Temperature control system with a pulse width modulated bridge  
[NASA-CASE-NPO-11304] c 14 N73-26430

**WHISKER COMPOSITES**  
Reinforced metallic composites Patent  
[NASA-CASE-XLE-00228] c 17 N70-38490

**WHISKERS (CRYSTALS)**  
Catalyst for growth of boron carbide single crystal whiskers  
[NASA-CASE-XHQ-03903] c 15 N69-21922

**WICKS**  
Method of forming a wick for a heat pipe  
[NASA-CASE-NPO-13391-1] c 34 N76-27515

**WIDE ANGLE LENSES**  
Wide angle long eye relief eyepiece Patent  
[NASA-CASE-XMS-06056-1] c 23 N71-24857

**WIDEBAND COMMUNICATION**  
Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346  
Multiple band circularly polarized microstrip antenna  
[NASA-CASE-MS-C-18334-1] c 32 N80-32604

**WINCHES**  
Winch having cable position and load indicators Patent  
[NASA-CASE-MS-C-12052-1] c 15 N71-24599

**WIND EFFECTS**  
Viscous pendulum damper Patent  
[NASA-CASE-LAR-10274-1] c 14 N71-17626

**WIND MEASUREMENT**  
Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c 20 N71-16340  
Maxometers (peak wind speed anemometers)  
[NASA-CASE-MFS-20916] c 14 N73-25460  
Wind sensor  
[NASA-CASE-NPO-13462-1] c 35 N76-24524  
Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493  
Wind measurement system  
[NASA-CASE-MFS-23362-1] c 47 N77-10753

**WIND PROFILES**  
Wind velocity probing device and method Patent  
[NASA-CASE-XLA-02081] c 20 N71-16281

**WIND TUNNEL APPARATUS**  
Wind tunnel airstream oscillating apparatus Patent  
[NASA-CASE-XLA-00112] c 11 N70-33287  
Electric arc device for heating gases Patent  
[NASA-CASE-XAC-00319] c 25 N70-41628  
Test unit free-flight suspension system Patent  
[NASA-CASE-XLA-00939] c 11 N71-15926  
Burst diaphragm flow initiator Patent  
[NASA-CASE-MFS-12915] c 11 N71-17600  
Electric arc apparatus Patent  
[NASA-CASE-XAC-01677] c 09 N71-20816  
Model launcher for wind tunnels Patent  
[NASA-CASE-XNP-03578] c 11 N71-23030  
Wind tunnel microphone structure Patent  
[NASA-CASE-XNP-00250] c 11 N71-28779  
Wind tunnel  
[NASA-CASE-LAR-10135-1] c 09 N79-21083  
Rotary target V-block --- aligning wind tunnel apparatus for optical measurement  
[NASA-CASE-LAR-12007-2] c 74 N79-25876  
Metric half-span model support system  
[NASA-CASE-LAR-12441-1] c 09 N82-23254

**WIND TUNNEL DRIVES**  
Electric arc driven wind tunnel Patent  
[NASA-CASE-XMF-00411] c 11 N70-36913

**WIND TUNNEL MODELS**  
Flow field simulation Patent  
[NASA-CASE-LAR-11138] c 12 N71-20436  
Multilegged support system Patent  
[NASA-CASE-XLA-01326] c 11 N71-21481  
Model launcher for wind tunnels Patent  
[NASA-CASE-XNP-03578] c 11 N71-23030  
Wind tunnel model damper Patent  
[NASA-CASE-XLA-09480] c 11 N71-33612  
Wind tunnel model and method  
[NASA-CASE-LAR-10812-1] c 09 N74-17955  
Method for determining thermo-physical properties of specimens --- photographic recording of changes in thin film phase-change temperature indicating material in wind tunnel  
[NASA-CASE-LAR-11053-1] c 25 N74-18551  
Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12720-1] c 09 N81-31229  
Aeroelastic instability stoppers for wind-tunnel models  
[NASA-CASE-LAR-12458-1] c 09 N81-31230  
Metric half-span model support system  
[NASA-CASE-LAR-12441-1] c 09 N82-23254

**WIND TUNNEL NOZZLES**  
Multi-purpose wind tunnel reaction control model block  
[NASA-CASE-MS-C-19706-1] c 09 N78-31129

Wind tunnel supplementary Mach number minimum section insert  
[NASA-CASE-LAR-12532-1] c 09 N82-11088

**WIND TUNNEL TESTS**  
Metallic hot wire anemometer --- for high speed wind tunnel tests  
[NASA-CASE-ARC-10911-1] c 35 N77-20400  
Multi-purpose wind tunnel reaction control model block  
[NASA-CASE-MS-C-19706-1] c 09 N78-31129  
Metric half-span model support system  
[NASA-CASE-LAR-12441-1] c 09 N82-23254

**WIND TUNNELS**  
Thin film gauge --- for measuring convective heat transfer rates along test surfaces in wind tunnels  
[NASA-CASE-NPO-10617-1] c 35 N74-22095  
Wind tunnel flow generation section  
[NASA-CASE-ARC-10710-1] c 09 N75-12969  
Apparatus for reducing aerodynamic noise in a wind tunnel  
[NASA-CASE-MFS-23099-1] c 09 N76-23273  
Static pressure orifice system testing method and apparatus  
[NASA-CASE-LAR-12269-1] c 35 N80-18358

**WIND TURBINES**  
Amplified wind turbine apparatus  
[NASA-CASE-MFS-23830-1] c 44 N82-24639  
Wind and solar powered turbine  
[NASA-CASE-NPO-15496-1] c 44 N82-28784

**WIND VELOCITY MEASUREMENT**  
Wind velocity probing device and method Patent  
[NASA-CASE-XLA-02081] c 20 N71-16281

**WINDING**  
Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475  
Pulse coupling circuit  
[NASA-CASE-LEW-10433-1] c 09 N72-22197

**WINDMILLS (WINDPOWERED MACHINES)**  
Electrical power generating system --- for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280  
Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 44 N82-29713

**WINDOWS (APERTURES)**  
Active microwave inlets and windows  
[NASA-CASE-LAR-10513-1] c 07 N72-25170  
Observation window for a gas confining chamber  
[NASA-CASE-NPO-10890] c 11 N73-12265  
Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 33 N82-23396

**WINDPOWER UTILIZATION**  
Amplified wind turbine apparatus  
[NASA-CASE-MFS-23830-1] c 44 N82-24639

**WINDPOWERED GENERATORS**  
Wind wheel electric power generator  
[NASA-CASE-MFS-23515-1] c 44 N80-21828  
Electrical power generating system --- for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280

**WINDSHIELDS**  
Transparent fire resistant polymers structures  
[NASA-CASE-ARC-10813-1] c 27 N76-16230

**WING CAMBER**  
Slotted variable camber flap  
[NASA-CASE-LAR-12541-1] c 05 N82-18203

**WING FLAPS**  
Jet aircraft configuration Patent  
[NASA-CASE-XLA-00087] c 02 N70-33332

**WING PROFILES**  
Variable-span aircraft Patent  
[NASA-CASE-XLA-00166] c 02 N70-34178  
Annular wing  
[NASA-CASE-FRC-11007-2] c 05 N82-26277

**WING ROOTS**  
Solar powered aircraft  
[NASA-CASE-LAR-12615-1] c 05 N81-32138

**WING SLOTS**  
Slotted variable camber flap  
[NASA-CASE-LAR-12541-1] c 05 N82-18203

**WING TIP VORTICES**  
Wingtip vortex dissipator for aircraft  
[NASA-CASE-LAR-11645-1] c 02 N77-10001

**WING TIPS**  
Smoke generator  
[NASA-CASE-ARC-10905-1] c 37 N77-13418  
Wingtip vortex turbine  
[NASA-CASE-LAR-12544-1] c 07 N81-27096

**WINGS**  
Ferry system  
[NASA-CASE-LAR-10574-1] c 11 N73-13257  
Surface finishing --- for aircraft wings  
[NASA-CASE-MS-C-12631-1] c 24 N77-28225  
Free wing assembly for an aircraft  
[NASA-CASE-FRC-10092-1] c 05 N79-12061

Detection of the transitional layer between laminar and turbulent flow areas on a wing surface --- using an accelerometer to measure pressure levels during wind tunnel tests  
[NASA-CASE-LAR-12261-1] c 02 N80-20224  
System for use in conducting wake investigation for a wing in flight --- differential pressure measurements for drag investigations  
[NASA-CASE-FRC-11024-1] c 02 N80-28300  
Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279  
Decoupler pylon wing/store flutter suppressor  
[NASA-CASE-LAR-12468-1] c 08 N82-32373

**WIRE**  
Transpiration cooled turbine blade manufactured from wires Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226  
Soldering device Patent  
[NASA-CASE-XLA-08911] c 15 N71-27214  
Forming tool for ribbon or wire  
[NASA-CASE-XLA-05966] c 15 N72-12408  
Method of removing insulated material from insulated wires  
[NASA-CASE-FRC-10038] c 15 N72-20444  
Shielded flat cable  
[NASA-CASE-MFS-13687-2] c 09 N72-22198  
Butt welder for fine gauge tungsten/rhenium thermocouple wire  
[NASA-CASE-LAR-10103-1] c 15 N73-14468  
Method of fabricating a twisted composite superconductor  
[NASA-CASE-LEW-11015] c 26 N73-32571

**WIRE BRIDGE CIRCUITS**  
Cavity radiometer Patent  
[NASA-CASE-XNP-08961] c 14 N71-24809

**WIRE CLOTH**  
Insulating structure Patent  
[NASA-CASE-XMF-00341] c 15 N70-33323  
Method of making screen by casting Patent  
[NASA-CASE-XLE-00953] c 15 N71-15966

**WIRE WINDING**  
Adjustable tension wire guide Patent  
[NASA-CASE-XMS-02383] c 15 N71-15918  
Superconducting alternator Patent  
[NASA-CASE-XLE-02823] c 09 N71-23443  
Electric motive machine including magnetic bearing  
[NASA-CASE-XGS-07805] c 15 N72-33476  
Laser measuring system for incremental assemblies --- measuring wire-wrapped frame assemblies in spark chambers  
[NASA-CASE-GSC-12321-1] c 36 N82-16396

**WIRELESS COMMUNICATION**  
Silent emergency alarm system for schools and the like  
[NASA-CASE-NPO-11307-1] c 10 N73-30205  
RF beam center location method and apparatus for power transmission system  
[NASA-CASE-NPO-13821-1] c 44 N78-28594

**WIRING**  
Apparatus for testing wiring harness by vibration generating means  
[NASA-CASE-MS-C-15158-1] c 14 N72-17325  
Test apparatus for locating shorts during assembly of electrical buses  
[NASA-CASE-ARC-11116-1] c 33 N82-24420

**WOODEN STRUCTURES**  
Structural wood panels with improved fire resistance  
[NASA-CASE-ARC-11174-1] c 24 N81-13999

**WORDS (LANGUAGE)**  
Minimal logic block encoder Patent  
[NASA-CASE-NPO-10595] c 10 N71-25917  
Parallel generation of the check bits of a PN sequence Patent  
[NASA-CASE-XNP-04623] c 10 N71-26103  
Digital memory in which the driving of each word location is controlled by a switch core Patent  
[NASA-CASE-XNP-01466] c 10 N71-26434

**WORK HARDENING**  
Method of producing complex aluminum alloy parts of high temper, and products thereof  
[NASA-CASE-MS-C-19693-1] c 26 N78-24333

**WORKING FLUIDS**  
Heat pipe with dual working fluids  
[NASA-CASE-ARC-10198] c 34 N78-17336  
Thermochemical generation of hydrogen  
[NASA-CASE-NPO-15015-1] c 25 N82-28368

**WRENCHES**  
Methods and apparatus employing vibratory energy for wrenching Patent  
[NASA-CASE-MFS-20586] c 15 N71-17686  
System for enhancing tool-exchange capabilities of a portable wrench  
[NASA-CASE-MFS-22283-1] c 37 N75-33395  
Zero torque gear head wrench  
[NASA-CASE-NPO-13059-1] c 37 N76-20480



- High-torque open-end wrench  
[NASA-CASE-NPO-13541-1] c 37 N79-14383
- WRIST**
- Wrist joint assembly  
[NASA-CASE-MFS-23311-1] c 54 N78-17676

**X**

**X RAY ABSORPTION**

- Low X-ray absorption aneurism clips  
[NASA-CASE-LAR-12650-1] c 52 N81-29768

**X RAY APPARATUS**

- Device and method for determining X ray reflection efficiency of optical surfaces  
[NASA-CASE-MFS-20243] c 23 N73-13662
- X-ray position detector  
[NASA-CASE-NPO-12087-1] c 74 N81-19898

**X RAY DIFFRACTION**

- Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
[NASA-CASE-MFS-23315-1] c 76 N78-24950

**X RAY IMAGERY**

- Low intensity X-ray and gamma-ray imaging device --- fiber optics  
[NASA-CASE-GSC-12263-1] c 74 N79-20857

**X RAY INSPECTION**

- Method of determining bond quality of power transistors attached to substrates --- X ray inspection of junction microstructure  
[NASA-CASE-MFS-21931-1] c 37 N75-26372
- Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
[NASA-CASE-MFS-23315-1] c 76 N78-24950

**X RAY IRRADIATION**

- Multiple environment materials test chamber having a multiple port X-ray tube for irradiating a plurality of samples  
Patent  
[NASA-CASE-XMS-02930] c 11 N71-23042

**X RAY SOURCES**

- Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N82-26629

**X RAY SPECTROSCOPY**

- Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N82-26629
- Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659

**X RAY TELESCOPES**

- X-ray reflection collimator adapted to focus X-radiation directly on a detector Patent  
[NASA-CASE-XHQ-04106] c 14 N70-40240
- Three mirror glancing incidence system for X-ray telescope  
[NASA-CASE-MFS-21372-1] c 74 N74-27866
- Method of and means for testing a glancing-incidence mirror system of an X-ray telescope  
[NASA-CASE-MFS-22409-2] c 74 N78-15880
- Extended range X-ray telescope  
[NASA-CASE-MFS-25282-1] c 89 N81-34122

**X RAYS**

- Support structure for irradiated elements Patent  
[NASA-CASE-XNP-06031] c 15 N71-15606
- Selective image area control of X-ray film exposure density  
[NASA-CASE-NPO-13808-1] c 35 N78-15461
- Real-time 3D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N82-10862

**X-Y PLOTTERS**

- Contour surveying system Patent  
[NASA-CASE-XLA-08646] c 14 N71-17586
- Particle parameter analyzing system --- x-y plotter circuits and display  
[NASA-CASE-XLE-06094] c 33 N78-17293
- Spatial energy distribution --- scanning a tunable diode laser beam automatically  
[NASA-CASE-LAR-12631-1] c 35 N82-18557

**X-15 AIRCRAFT**

- Energy management system for glider type vehicle  
Patent  
[NASA-CASE-XFR-00756] c 02 N71-13421

**XENON LAMPS**

- Optical pump and driver system for lasers  
[NASA-CASE-ERC-10283] c 16 N72-25485
- Purging means and method for Xenon arc lamps  
[NASA-CASE-NPO-11978] c 31 N78-17238
- Multiple anode arc lamp system  
[NASA-CASE-NPO-10857-1] c 33 N80-14330

**Y**

**YAG LASERS**

- Dually mode locked Nd YAG laser  
[NASA-CASE-GSC-11746-1] c 36 N75-19654
- Length controlled stabilized mode-lock ND YAG laser  
[NASA-CASE-GSC-11571-1] c 36 N77-25499

**YARNS**

- Flexible pile thermal barrier insulator  
[NASA-CASE-MSC-19568-1] c 34 N78-25350
- Lightweight electrically-powered flexible thermal laminate --- made of metal and nonconductive yarns  
[NASA-CASE-MSC-12662-1] c 33 N79-12331

**YAW**

- Three-axis controller Patent  
[NASA-CASE-XAC-01404] c 05 N70-41581
- Thrust augmented spin recovery device  
[NASA-CASE-LAR-11970-2] c 08 N81-19130

**YIELD STRENGTH**

- High toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-3] c 26 N80-32484

**YO-YO DEVICES**

- Stretch de-spin mechanism Patent  
[NASA-CASE-XGS-00619] c 30 N70-40016

**Z**

**ZEOLITES**

- Filter system for control of outgas contamination in vacuum Patent  
[NASA-CASE-MFS-14711] c 15 N71-26185

**ZINC**

- Potassium silicate zinc coatings  
[NASA-CASE-GSC-10361-1] c 18 N72-23581
- Rechargeable battery which combats shape change of the zinc anode  
[NASA-CASE-HQN-10862-1] c 44 N76-29699

**ZINC COMPOUNDS**

- Method of changing the conductivity of vapor deposited gallium arsenide by the introduction of water into the vapor deposition atmosphere Patent  
[NASA-CASE-XNP-01961] c 26 N71-29156
- Synthesis of zinc titanate pigment and coatings containing the same  
[NASA-CASE-MFS-13532] c 18 N72-17532
- Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127
- Zinc-halide battery with molten electrolyte  
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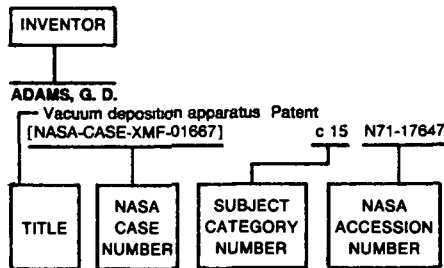


## NASA PATENT ABSTRACTS BIBLIOGRAPHY

### Section 2

JANUARY 1983

### Typical Inventor Index Listing



Listings in this index are arranged alphabetically by inventor. The title of the document provides the user with a brief description of the subject matter. The NASA Case Number is the prime access point to patent documents. The subject category number indicates the category in Section 1 (Abstracts) in which the citation is located. The NASA accession number denotes the number by which the citation is identified within the subject category. The titles are arranged under each inventor in ascending accession number order.

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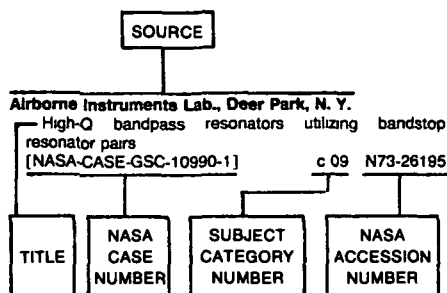


## NASA PATENT ABSTRACTS BIBLIOGRAPHY

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## Section 2

## Typical Source Index Listing



Listings in this index are arranged alphabetically by source. The title of the document provides the user with a brief description of the subject matter. The NASA Case Number is the prime access point to patent documents. The subject category number indicates the category in Section 1 (Abstracts) in which the citation is located. The NASA accession number denotes the number by which the citation is identified within the subject category. The titles are arranged under each source in ascending accession number order.

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Valve actuator Patent  
[NASA-CASE-XHQ-01208] c 15 N70-35409
- Ball Bros. Research Corp., Boulder, Colo.**  
Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c 32 N74-20864
- Star scanner  
[NASA-CASE-GSC-11569-1] c 89 N74-30886
- Barnes Engineering Co., Stamford, Conn.**  
Multi-lobar scan horizon sensor Patent  
[NASA-CASE-XGS-00809] c 21 N70-35427
- Horizon sensor with a plurality of fixedly positioned radiation compensated radiation sensitive detectors Patent  
[NASA-CASE-XNP-06957] c 14 N71-21088
- Miniature carbon dioxide sensor and methods  
[NASA-CASE-MSC-13332-1] c 14 N72-21408
- Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449
- Battelle Columbus Labs., Ohio.**  
Attaching of strain gages to substrates  
[NASA-CASE-FRC-10093-1] c 35 N80-20560
- Battelle Memorial Inst., Columbus, Ohio.**  
Process for preparation of dianilinosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230
- Process for preparation of high-molecular-weight polyaryloxysilanes Patent  
[NASA-CASE-XMF-08674] c 06 N71-28807
- Method for determining presence of OH in magnesium oxide  
[NASA-CASE-NPO-10774] c 06 N72-17095
- Porus electrode comprising a bonded stack of pieces of corrugated metal foil  
[NASA-CASE-GSC-11368-1] c 09 N73-32108
- Method of making porous conductive supports for electrodes  
[NASA-CASE-GSC-11367-1] c 44 N74-19692
- Battelle Memorial Inst., Richland, Wash.**  
Low temperature aluminum alloy Patent  
[NASA-CASE-XMF-02786] c 17 N71-20743
- Battelle Northwest Labs., Richland, Wash.**  
Preparation of high purity copper fluoride  
[NASA-CASE-LEW-10794-1] c 06 N72-17093
- Bausch and Lomb, Inc., Rochester, N. Y.**  
Petzval type objective including field shaping lens Patent  
[NASA-CASE-GSC-10700] c 23 N71-30027
- Illumination system including a virtual light source Patent  
[NASA-CASE-HQN-10781] c 23 N71-30292
- Baylor Univ., Houston, Tex.**  
EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MSC-13282-1] c 05 N71-24729
- Compressible biomedical electrode  
[NASA-CASE-MSC-13648] c 05 N72-27103
- Beckman Instruments, Inc., Anaheim, Calif.**  
Pressure modulating valve  
[NASA-CASE-MSC-14905-1] c 37 N77-28487



**Beckman Instruments, Inc., Fullerton, Calif.**

Pulse activated polarographic hydrogen detector Patent  
[NASA-CASE-XMF-06531] c 14 N71-17575  
Electronic divider and multiplier using photocells Patent  
[NASA-CASE-XFR-05637] c 09 N71-19480  
Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
[NASA-CASE-XNP-00745] c 10 N71-28960  
Gas operated actuator  
[NASA-CASE-NPO-11340] c 15 N72-33477  
Specific wavelength colorimeter  
[NASA-CASE-MSC-14081-1] c 35 N74-27860

**Beckman Instruments, Inc., South Pasadena, Calif.**

Pneumatic system for controlling and actuating pneumatic cyclic devices  
[NASA-CASE-XMS-04843] c 03 N69-21469

**Becton, Dickinson and Co., Rutherford, N.J.**

Vacuum probe surface sampler  
[NASA-CASE-LAR-10623-1] c 14 N73-30395

**Bell and Howell Co., Chicago, Ill.**

Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233  
Process for producing a well-adhered durable optical coating on an optical plastic substrate  
[NASA-CASE-ARC-11039-1] c 74 N78-32854

**Bell Aerospace Co., Buffalo, N. Y.**

Modulator for tone and binary signals  
[NASA-CASE-GSC-11743-1] c 32 N75-24981  
Correlation type phase detector  
[NASA-CASE-GSC-11744-1] c 33 N75-26243

**Bell Aerosystems Co., Buffalo, N. Y.**

Lunar landing flight research vehicle Patent  
[NASA-CASE-XFR-00929] c 31 N70-34966  
Flexibly connected support and skin Patent  
[NASA-CASE-XLA-01027] c 31 N71-24035  
Injection head for delivering liquid fuel and oxidizers  
[NASA-CASE-NPO-10046] c 28 N72-17843  
Flight control system  
[NASA-CASE-MSC-13397-1] c 21 N72-25595

**Bellcomm, Inc., Washington, D. C.**

Physical correction filter for improving the optical quality of an image  
[NASA-CASE-HQN-10542-1] c 74 N75-25706

**Bendix Corp., Ann Arbor, Mich.**

Circuit breaker utilizing magnetic latching relays Patent  
[NASA-CASE-MSC-11277] c 09 N71-29008

**Bendix Corp., Columbia, Md.**

Microwave dichroic plate  
[NASA-CASE-GSC-12171-1] c 33 N79-28416

**Bendix Corp., Davenport, Iowa.**

Dual stage check valve  
[NASA-CASE-MSC-13587-1] c 15 N73-30459

**Bendix Corp., Detroit, Mich.**

Deformable vehicle wheel Patent  
[NASA-CASE-MFS-20400] c 31 N71-18611

**Bendix Corp., Huntsville, Ala.**

Multi axes vibration fixtures  
[NASA-CASE-MFS-20242] c 14 N73-19421

**Bendix Corp., Kennedy Space Center, Fla.**

Color perception tester  
[NASA-CASE-KSC-10278] c 05 N72-16015

**Bendix Corp., Teterboro, N. J.**

Evacuation valve  
[NASA-CASE-LAR-10061-1] c 15 N72-31483

**Bendix Research Labs., Southfield, Mich.**

Image tube  
[NASA-CASE-GSC-11602-1] c 33 N74-21850

**Bionetics Corp., Hampton, Va.**

Small conductive particle sensor  
[NASA-CASE-LAR-12552-1] c 35 N82-11431

**Boeing Aerospace Co., Houston, Tex.**

Fluid sample collection and distribution system  
[NASA-CASE-MSC-16841-1] c 34 N79-24285  
Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MSC-16777-1] c 51 N80-27067

**Boeing Aerospace Co., Seattle, Wash.**

Method and apparatus for fabricating improved solar cell modules  
[NASA-CASE-NPO-14416-1] c 44 N81-14389

**Boeing Co., Cocoa Beach, Fla.**

Positive contact resistance soldering unit  
[NASA-CASE-KSC-10242] c 15 N72-23497  
Variable resistance constant tension and lubrication device  
[NASA-CASE-KSC-10723-1] c 37 N75-13265

**Boeing Co., Houston, Tex.**

Method and apparatus for eliminating luminol interference material  
[NASA-CASE-MSC-16260-1] c 51 N80-16714

**Boeing Co., Huntsville, Ala.**

Hydrogen fire blink detector  
[NASA-CASE-MFS-15063] c 14 N72-25412  
Boreoscope with variable angle scope  
[NASA-CASE-MFS-15162] c 14 N72-32452  
Guide for a typewriter  
[NASA-CASE-MFS-15218-1] c 37 N77-19457

**Boeing Co., Pasadena, Tex.**

Medical subject monitoring systems  
[NASA-CASE-MSC-14180-1] c 52 N76-14757

**Boeing Co., Seattle, Wash.**

Strain gage Patent Application  
[NASA-CASE-FRC-10053] c 14 N70-35587  
Method of inhibiting stress corrosion cracks in titanium alloys Patent  
[NASA-CASE-NPO-10271] c 17 N71-16393  
Strain sensor for high temperatures Patent  
[NASA-CASE-XNP-09205] c 14 N71-17657  
Forming tool for ribbon or wire  
[NASA-CASE-XLA-05966] c 15 N72-12408  
Solar cell assembly test method  
[NASA-CASE-NPO-10401] c 03 N72-20033  
Thermal compression bonding of interconnectors  
[NASA-CASE-GSC-10303] c 15 N72-22487  
Extrusion can  
[NASA-CASE-NPO-10812] c 15 N73-13464  
Radiation sensitive solid state switch  
[NASA-CASE-NPO-10817-1] c 08 N73-30135  
Plasma cleaning device  
[NASA-CASE-MFS-22906-1] c 75 N78-27913  
Calibrating pressure switch  
[NASA-CASE-XMF-04494-1] c 33 N79-33392

**Boeing Commercial Airplane Co., Seattle, Wash.**

Improved tire/wheel concept  
[NASA-CASE-LAR-11695-2] c 37 N80-18402  
Tire/wheel concept  
[NASA-CASE-LAR-11695-2] c 37 N81-24443  
Slotted variable camber flap  
[NASA-CASE-LAR-12541-1] c 05 N82-18203  
Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384

**Borden, Inc., New York, N.Y.**

Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641  
Separator for alkaline batteries and method of making same  
[NASA-CASE-GSC-10350-1] c 44 N82-24642  
Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643  
Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644  
Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645  
Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370

**Borg-Warner Corp., Chicago, Ill.**

Data transfer system Patent  
[NASA-CASE-NPO-12107] c 08 N71-27255

**Brown and Root-Northrop, Houston, Tex.**

Anti-log composition  
[NASA-CASE-MSC-13530-2] c 23 N75-14834

**Brown Engineering Co., Inc., Huntsville, Ala.**

Air bearing Patent  
[NASA-CASE-XMF-01887] c 15 N71-10617  
Collapsible nozzle extension for rocket engines Patent  
[NASA-CASE-MFS-11497] c 28 N71-16224  
Inspection gage for boss Patent  
[NASA-CASE-XMF-04966] c 14 N71-17658  
Method of recording a gas flow pattern Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815  
Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688  
Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023  
Thruster maintenance system Patent  
[NASA-CASE-MFS-20325] c 28 N71-27095  
Inflatable transpiration cooled nozzle  
[NASA-CASE-MFS-20619] c 28 N72-11708

**C****California Computer Products, Inc., Anaheim.**

Temperature regulation circuit Patent  
[NASA-CASE-XNP-02792] c 14 N71-28958

**California Inst. of Tech., Pasadena.**

Attitude control for spacecraft Patent  
[NASA-CASE-XNP-02982] c 31 N70-41855

**Baseband signal combiner for large aperture antenna array**

[NASA-CASE-NPO-14641-1] c 32 N81-29308  
Schottky barrier solar cell  
[NASA-CASE-NPO-13689-2] c 44 N81-29525  
Interferometer  
[NASA-CASE-NPO-14448-1] c 74 N81-29963  
Crude oil desulfurization  
[NASA-CASE-NPO-14542-1] c 25 N82-23282

**California Univ., Berkeley.**

Adjustable mount for a inehedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123  
Infrared detectors  
[NASA-CASE-LAR-10728-1] c 14 N73-12445  
Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473  
Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c 35 N78-12390  
Automatic multiple-sample applicator and electrophoresis apparatus  
[NASA-CASE-ARC-10991-1] c 25 N78-14104  
Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229  
Microelectrophoretic apparatus and process  
[NASA-CASE-ARC-11121-1] c 25 N79-14169

**California Univ., Los Angeles.**

Continuous plasma light source  
[NASA-CASE-XNP-04167-2] c 25 N72-24753  
Continuous plasma laser  
[NASA-CASE-XNP-04167-3] c 36 N77-19416

**Catholic Univ. of America, Washington, D.C.**

Electromagnetic wave energy converter  
[NASA-CASE-GSC-11394-1] c 09 N73-32109

**Chance Vought Corp., Dallas, Tex.**

Coupling for linear shaped charge Patent  
[NASA-CASE-XLA-00189] c 33 N70-36846  
Spin forming tubular elbows Patent  
[NASA-CASE-XMF-01083] c 15 N71-22723  
Single action separation mechanism Patent  
[NASA-CASE-XLA-00188] c 15 N71-22874

**Chrysler Corp., Detroit, Mich.**

Ceramic insulation for radiant heating environments and method of preparing the same Patent  
[NASA-CASE-MFS-14253] c 33 N71-24858  
Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051

**Chrysler Corp., Huntsville, Ala.**

Apparatus for ejection of an instrument cover  
[NASA-CASE-XMF-04132] c 15 N69-27502

**Clemson Univ., S.C.**

Method of forming dynamic membrane on stainless steel support  
[NASA-CASE-MSC-18172-1] c 26 N80-19237

**Collins Radio Co., Cedar Rapids, Iowa.**

Power responsive overload sensing circuit Patent  
[NASA-CASE-GSC-10667-1] c 10 N71-33129  
Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467

**Collins Radio Co., Dallas, Tex.**

Signal path series step biased multidevice high efficiency amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430  
Heat conductive resiliently compressible structure for space electronics package modules Patent  
[NASA-CASE-MSC-12389] c 33 N71-29052  
Infinite range electronics gain control circuit  
[NASA-CASE-GSC-10786-1] c 10 N72-28241

**Colorado State Univ., Fort Collins.**

Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148

**Comprehensive Designers, Inc., Sherman Oaks, Calif.**

Vehicle for use in planetary exploration  
[NASA-CASE-NPO-11366] c 11 N73-26238

**Computer Control Co., Inc., Framingham, Mass.**

Test fixture for pellet-like electrical elements  
[NASA-CASE-XNP-06032] c 09 N69-21926  
Support structure for irradiated elements Patent  
[NASA-CASE-XNP-06031] c 15 N71-15606  
Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137

**Computer Sciences Corp., Falls Church, Va.**

Oceanic wave measurement system  
[NASA-CASE-MFS-23862-1] c 48 N80-18667

**Conrac Corp., Pasadena, Calif.**

Penetrating radiation system for detecting the amount of liquid in a tank Patent  
[NASA-CASE-MSC-12280] c 27 N71-16348

**Consolidated Controls Corp., El Segundo, Calif.**

Low temperature latching solenoid  
[NASA-CASE-MSC-18106-1] c 33 N82-11357



**Cornell Univ., Ithaca, N. Y.**

Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon Patent  
[NASA-CASE-XGS-01881] c 09 N70-40123

**Crane Co., Burbank, Calif.**

Hydraulic transformer Patent  
[NASA-CASE-MFS-20830] c 15 N71-30028

**Curtiss-Wright Corp., Wood-Ridge, N.J.**

Gas turbine combustion apparatus Patent  
[NASA-CASE-XLE-103477-1] c 28 N71-20330

**Cutler-Hammer, Inc., Melville, N.Y.**

Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346

**D****Delaware Univ., Newark.**

High field CdS detector for infrared radiation  
[NASA-CASE-LAR-11027-1] c 35 N74-18088

**Denver Univ., Colo.**

Metal shearing energy absorber  
[NASA-CASE-HQN-10638-1] c 15 N73-30460

**Department of Transportation, Cambridge, Mass.**

Optical noise suppression device and method  
[NASA-CASE-MSC-12640-1] c 74 N76-31998

**Desert Research Inst., Reno, Nev.**

Improved constant-output atomizer  
[NASA-CASE-MFS-25631-1] c 34 N82-10360

**Dome and Margolin, Inc., Bohemia, N.Y.**

Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984

**Douglas Aircraft Co., Inc., Santa Monica, Calif.**

Recoverable single stage spacecraft booster Patent  
[NASA-CASE-XMF-01973] c 31 N70-41588

Switching circuit employing regeneratively connected complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032

Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489

Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881

Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721

Energy absorption device Patent  
[NASA-CASE-XNP-01848] c 15 N71-28959

Collapsible pistons  
[NASA-CASE-MSC-13769-1] c 11 N73-32152

**Duke Univ., Durham, N. C.**

Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10792-1] c 33 N74-11049

**Dumont Electron Tubes, Clifton, N. J.**

High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206

**E****Echo Science Corp., Mountain View, Calif.**

Dynamic capacitor having a peripherally driven element and system incorporating the same  
[NASA-CASE-XNP-02899-1] c 33 N79-21265

**Eitel-McCullough, Inc., San Carlos, Calif.**

Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312

**Electrac, Inc., Anaheim, Calif.**

Optimum pre-detection diversity receiving system Patent  
[NASA-CASE-XGS-00740] c 07 N71-23098

**Electric Storage Battery Co., Raleigh, N.C.**

Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c 03 N71-29129

Storage battery comprising negative plates of a wedge shaped configuration  
[NASA-CASE-NPO-11806-1] c 44 N74-19693

**Electric Storage Battery Co., Yardley, Pa.**

Electric storage battery  
[NASA-CASE-NPO-11021] c 03 N72-20032

**Electro-Optical Systems, Inc., Pasadena, Calif.**

Focusing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618

Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c 03 N71-11052

Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468

Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c 15 N71-20440

Particle detection apparatus including a ballistic pendulum Patent  
[NASA-CASE-XMS-04201] c 14 N71-22990

Polarity sensitive circuit Patent

[NASA-CASE-XNP-00952] c 10 N71-23271

Ion engine casing construction and method of making same Patent

[NASA-CASE-XNP-06942] c 28 N71-23293

Material handling device Patent

[NASA-CASE-XNP-09770-3] c 11 N71-27036

Screen particle separator

[NASA-CASE-XNP-09770-2] c 15 N72-22483

**Electronic Image Systems Corp., Cambridge, Mass.**

Drying apparatus for photographic sheet material  
[NASA-CASE-GSC-11074-1] c 14 N73-28489

**Essex Corp., Alexandria, Va.**

Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N81-24164

**Ewen Knight Corp., East Natick, Mass.**

Method and means for providing an absolute power measurement capability Patent  
[NASA-CASE-ERC-11020] c 14 N71-26774

**F****Fairchild Hiller Corp., Germantown, Md.**

Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c 14 N71-27325

Space simulation and radiative property testing system and method Patent

[NASA-CASE-MFS-20096] c 14 N71-30026

Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829

**Fairchild Republic Co., Farmingdale, N. Y.**

Surface conforming thermal/pressure seal  
[NASA-CASE-MSC-18422-1] c 37 N82-16408

**Faraday Labs., Inc., La Jolla, Calif.**

Method for attaching a fused-quartz mirror to a conductive metal substrate  
[NASA-CASE-MFS-23405-1] c 26 N77-29260

**Federal-Mogul Corp., Los Alamitos, Calif.**

Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975

**Florida Univ., Gainesville.**

Safety flywheel  
[NASA-CASE-HQN-10888-1] c 44 N79-14527

**Foothill College, Los Altos Hills, Calif.**

Electrical conductivity cell and method for fabricating the same  
[NASA-CASE-ARC-10810-1] c 33 N76-19339

**Ford Motor Co., Dearborn, Mich.**

Omnidirectional acceleration device Patent  
[NASA-CASE-HQN-10780] c 14 N71-30265

**FMC Corp., New York.**

Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504

**G****Garrett Corp., Los Angeles, Calif.**

Relief valve  
[NASA-CASE-XMS-05894-1] c 15 N69-21924

Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203

Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191

Water management system and an electrolytic cell therefor Patent  
[NASA-CASE-MSC-10960-1] c 03 N71-24718

Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c 32 N72-25877

Process for separation of dissolved hydrogen from water by use of palladium and process for coating palladium with palladium black  
[NASA-CASE-MSC-13335-1] c 06 N72-31140

Flexible joint for pressurizable garment  
[NASA-CASE-MSC-11072] c 54 N74-32546

Gas compression apparatus  
[NASA-CASE-MSC-14757-1] c 35 N78-10428

Wind tunnel  
[NASA-CASE-LAR-10135-1] c 09 N79-21083

Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345

**Garrett Corp., Torrance, Calif.**

Adaptive reference voltage generator for firing angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N81-31481

**General Dynamics Corp., San Diego, Calif.**

Light radiation direction indicator with a baffle of two parallel gnds  
[NASA-CASE-XNP-03930] c 14 N69-24331

Method and apparatus for attaching physiological monitoring electrodes Patent  
[NASA-CASE-XFR-07658-1] c 05 N71-26293

Driving lamps by induction  
[NASA-CASE-MFS-21214-1] c 09 N73-30181

**General Dynamics/Astronautics, San Diego, Calif.**

Determination of spot weld quality Patent  
[NASA-CASE-XNP-02588] c 15 N71-18613

Pressure transducer calibrator Patent  
[NASA-CASE-XNP-01660] c 14 N71-23036

Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830

**General Dynamics/Convair, San Diego, Calif.**

Signal generator  
[NASA-CASE-XNP-05612] c 09 N69-21468

Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922

Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968

Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813

Heat exchanger  
[NASA-CASE-MFS-22991-1] c 34 N77-10463

**General Electric Co., Cincinnati, Ohio.**

Dual output variable pitch turbofan actuation system  
[NASA-CASE-LEW-12419-1] c 07 N77-14025

Reverse pitch fan with divided splitter  
[NASA-CASE-LEW-12760-1] c 07 N77-17059

Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170

Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12830-1] c 07 N77-23106

Blade retainer assembly  
[NASA-CASE-LEW-12608-1] c 07 N77-27116

Platform for a swing root turbomachinery blade  
[NASA-CASE-LEW-12312-1] c 07 N77-32148

Deformable bearing seat  
[NASA-CASE-LEW-12527-1] c 37 N77-32500

Bearing seat usable in a gas turbine engine  
[NASA-CASE-LEW-12477-1] c 37 N77-32501

Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12321-1] c 37 N78-10467

Impact absorbing blade mounts for variable pitch blades  
[NASA-CASE-LEW-12313-1] c 37 N78-10468

Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055

Gas turbine engine with convertible accessories  
[NASA-CASE-LEW-12390-1] c 07 N78-17056

Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384

Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089

Redundant disc  
[NASA-CASE-LEW-12496-1] c 07 N78-33101

Fuel delivery system including heat exchanger means  
[NASA-CASE-LEW-12793-1] c 37 N79-11403

Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-3] c 07 N79-14096

Variable area exhaust nozzle  
[NASA-CASE-LEW-12378-1] c 07 N79-14097

Sound-suppressing structure with thermal relief  
[NASA-CASE-LEW-12658-1] c 71 N79-14871

Method and apparatus for rapid thrust increases in a turbofan engine  
[NASA-CASE-LEW-12971-1] c 07 N80-18039

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[NASA-CASE-LEW-13201-1] c 07 N81-14999

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[NASA-CASE-LEW-12907-2] c 07 N81-19115

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[NASA-CASE-LEW-12594-2] c 07 N81-19116

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**General Electric Co., Cleveland, Ohio.**

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[NASA-CASE-XHQ-03903] c 15 N69-21922

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[NASA-CASE-XGS-03505] c 03 N71-10608

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[NASA-CASE-XGS-02011] c 15 N71-20739

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[NASA-CASE-MSC-13917-1] c 05 N72-15098

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[NASA-CASE-MSC-13609-1] c 05 N72-25122

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[NASA-CASE-MFS-21441-1] c 14 N73-30392



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[NASA-CASE-NPO-13160-1] c 35 N74-18090

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[NASA-CASE-MFS-21395-1] c 25 N74-26948

Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c 34 N74-27744

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[NASA-CASE-MSC-13601-2] c 54 N75-27759

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[NASA-CASE-MSC-14640-1] c 54 N76-14804

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[NASA-CASE-NPO-14467-1] c 44 N79-31753

Voltage feed through apparatus having reduced partial discharge  
[NASA-CASE-GSC-12347-1] c 33 N80-18286

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Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729

**General Electric Co., Schenectady, N. Y.**

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[NASA-CASE-MFS-22022-1] c 37 N76-15460

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[NASA-CASE-GSC-12075-1] c 32 N77-31350

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[NASA-CASE-LEW-12906-1] c 26 N77-32279

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[NASA-CASE-MFS-21931-1] c 37 N75-26372

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[NASA-CASE-XLA-09371] c 10 N71-18724

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[NASA-CASE-NPO-10199] c 09 N72-17156

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[NASA-CASE-XGS-03351] c 31 N71-16081

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[NASA-CASE-GSC-11533-1] c 14 N73-13435

Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c 52 N74-27566

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[NASA-CASE-ARC-10266-1] c 33 N75-29318

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[NASA-CASE-LEW-13148-1] c 33 N80-20487

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**Globe-Union, Inc., Milwaukee, Wis.**

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[NASA-CASE-GSC-11514-1] c 03 N72-24037

**Goodyear Aerospace Corp., Akron, Ohio.**

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[NASA-CASE-MFS-14023] c 33 N71-25351

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[NASA-CASE-HQN-10364] c 06 N71-27363

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[NASA-CASE-LAR-10180-1] c 06 N71-13461

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[NASA-CASE-MSC-14143-1] c 77 N75-20139

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[NASA-CASE-MSC-20112-1] c 37 N82-28641

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[NASA-CASE-XMS-09652-1] c 05 N71-26333

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[NASA-CASE-MSC-14771-1] c 54 N77-32722

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[NASA-CASE-MSC-16394-1] c 28 N81-24280

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[NASA-CASE-MSC-20127-1] c 44 N82-32843

**Harris Corp., Melbourne, Fla.**

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[NASA-CASE-LAR-12196-1] c 33 N81-26358

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[NASA-CASE-LAR-12195-1] c 31 N81-27324

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[NASA-CASE-XMF-02108] c 31 N70-36845

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Method and apparatus for cryogenic wire stripping Patent  
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[NASA-CASE-LAR-10416-1] c 24 N74-30001

**Hoffman Electronics Corp., El Monte, Calif.**

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[NASA-CASE-XGS-04531] c 03 N69-24267

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[NASA-CASE-GSC-10041-1] c 10 N71-19418

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[NASA-CASE-XMS-04215-1] c 09 N69-39987

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[NASA-CASE-MSC-12033-1] c 09 N71-13531

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[NASA-CASE-XGS-05289] c 09 N71-19470

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[NASA-CASE-XNP-05429] c 26 N71-21824

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**Honeywell, Inc., St. Petersburg, Fla.**

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[NASA-CASE-MSC-14428-1] c 23 N77-17161

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[NASA-CASE-XLE-00953] c 15 N71-15966

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[NASA-CASE-XLE-00703] c 15 N71-15967

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[NASA-CASE-XNP-01735] c 07 N71-22750

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[NASA-CASE-XNP-04338] c 17 N71-23046

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[NASA-CASE-XNP-02923] c 28 N71-23081

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[NASA-CASE-XNP-08274] c 10 N71-13537  
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[NASA-CASE-MFS-22411-1] c 37 N74-21058  
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[NASA-CASE-GSC-11353-1] c 74 N74-21304  
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[NASA-CASE-GSC-12148-1] c 32 N79-20296  
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[NASA-CASE-MFS-21424-1] c 34 N74-27730

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[NASA-CASE-MSC-90153-2] c 05 N72-25120

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**International Business Machines Corp., Hopewell Junction, N. Y.**  
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[NASA-CASE-NPO-13969-1] c 76 N79-23798

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[NASA-CASE-FRC-11005-1] c 06 N82-16075

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[NASA-CASE-XNP-09752] c 14 N69-21541  
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[NASA-CASE-XNP-07481] c 25 N69-21929  
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[NASA-CASE-XNP-05975] c 15 N69-23185  
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[NASA-CASE-XNP-09225] c 09 N69-24333

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[NASA-CASE-XNP-09776] c 09 N69-39929  
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[NASA-CASE-XNP-00438] c 21 N70-35089  
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[NASA-CASE-XNP-00449] c 14 N70-35220  
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[NASA-CASE-XNP-00540] c 09 N70-35382  
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[NASA-CASE-XNP-00840] c 15 N70-38225  
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[NASA-CASE-XNP-00450] c 15 N70-38603  
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[NASA-CASE-XNP-00637] c 14 N70-40273

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[NASA-CASE-XNP-01390] c 28 N70-41275

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[NASA-CASE-XNP-01567] c 15 N70-41310

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[NASA-CASE-XNP-02723] c 07 N70-41680

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[NASA-CASE-XNP-01472] c 14 N70-41807

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[NASA-CASE-XNP-01152] c 15 N70-41811

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[NASA-CASE-XNP-01501] c 21 N70-41930

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[NASA-CASE-XNP-03128] c 10 N70-41991

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[NASA-CASE-XNP-01383] c 09 N71-10659

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[NASA-CASE-XNP-03134] c 07 N71-10676

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[NASA-CASE-XNP-01464] c 03 N71-10728

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[NASA-CASE-XNP-03378] c 03 N71-11051

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[NASA-CASE-XNP-10843] c 07 N71-11267

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[NASA-CASE-XNP-08832] c 08 N71-12506

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[NASA-CASE-XNP-00384] c 09 N71-13530

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[NASA-CASE-NPO-10117] c 15 N71-15608

High temperature lens construction Patent  
[NASA-CASE-XNP-04111] c 14 N71-15622

Solder flux which leaves corrosion-resistant coating Patent  
[NASA-CASE-XNP-03459-2] c 18 N71-15688

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[NASA-CASE-XNP-00920] c 15 N71-15906

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[NASA-CASE-XNP-01057] c 07 N71-15907

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[NASA-CASE-XAC-00731] c 11 N71-15960

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[NASA-CASE-XNP-08840] c 23 N71-16365

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[NASA-CASE-NPO-10320] c 14 N71-17655

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[NASA-CASE-NPO-10175] c 14 N71-18625

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[NASA-CASE-XNP-03459] c 15 N71-21078

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[NASA-CASE-XNP-02140] c 09 N71-23097

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[NASA-CASE-NPO-10173] c 15 N71-24696



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						Coaxial injector for reaction motors [NASA-CASE-NPO-11095]	c 15	N72-25455
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						Helium refrigerator and method for decontaminating the refrigerator [NASA-CASE-NPO-10634]	c 23	N72-25619



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[NASA-CASE-NPO-11775] c 26 N72-28761

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[NASA-CASE-NPO-11129] c 09 N72-33204

Pseudonoise sequence generators with three tap linear feedback shift registers  
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Versatile arithmetic unit for high speed sequential decoder  
[NASA-CASE-NPO-11371] c 08 N73-12177

Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c 09 N73-12214

Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244

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Irradiance measuring device  
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Program for computer aided reliability estimation  
[NASA-CASE-NPO-13086-1] c 15 N73-12495

Apparatus for deriving synchronizing pulses from pulses in a single channel PCM communications system  
[NASA-CASE-NPO-11302-1] c 07 N73-13149

Rotary vane attenuator when rotor has orthogonally disposed resistive and dielectric cards  
[NASA-CASE-NPO-11418-1] c 14 N73-13420

Gas flow control device  
[NASA-CASE-NPO-11479] c 15 N73-13462

Electrolytic gas operated actuator  
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[NASA-CASE-NPO-11481] c 21 N73-13644

Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130

Cyclically operable optical shutter  
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Collapsible structure for an antenna reflector  
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Two carrier communication system with single transmitter  
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[NASA-CASE-NPO-11456] c 08 N73-26176

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[NASA-CASE-NPO-15269-1] c 44 N82-29710  
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[NASA-CASE-NPO-15808-1] c 44 N82-29714  
Electromigration process for the purification of molten silicon during crystal growth  
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**Keltec Industries, Inc., Alexandria, Va.**  
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[NASA-CASE-HQN-00937] c 07 N71-28979  
**Kentucky Univ., Lexington.**  
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[NASA-CASE-MSC-18759-1] c 52 N81-24716  
**Kinelogic Corp., Pasadena, Calif.**  
Excitation and detection circuitry for a flux responsive magnetic head  
[NASA-CASE-XNP-04183] c 09 N69-24329  
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[NASA-CASE-XNP-02778] c 08 N71-22710  
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[NASA-CASE-ERC-10041] c 08 N71-29138  
Ritchey-Chretien Telescope  
[NASA-CASE-GSC-11487-1] c 14 N73-30393  
**Konigsberg Instruments, Inc., Pasadena, Calif.**  
Accelerometer telemetry system  
[NASA-CASE-ARC-10849-1] c 17 N76-29347  
**Korad Corp., New York.**  
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[NASA-CASE-MFS-11279] c 16 N71-20400

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**Life Systems, Inc., Beachwood, Ohio.**  
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[NASA-CASE-XLA-03538] c 15 N71-24897  
**Little (Arthur D.), Inc., Cambridge, Mass.**  
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[NASA-CASE-XGS-01052] c 14 N71-15992  
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[NASA-CASE-MSC-14331-1] c 27 N76-24405  
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[NASA-CASE-MSC-14331-2] c 27 N78-17213  
Process for spinning flame retardant elastomeric compositions  
[NASA-CASE-MSC-14331-3] c 27 N78-32262  
Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MSC-18382-1] c 27 N82-16238  
Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MSC-18382-2] c 27 N82-24344  
Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-1] c 54 N82-32985  
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[NASA-CASE-MSC-12411-1] c 05 N72-20096  
**Litton Industries, College Park, Md.**  
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**Litton Industries, San Carlos, Calif.**  
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[NASA-CASE-XNP-02507] c 31 N71-17679  
**Lockheed Electronics Co., Houston, Tex.**  
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[NASA-CASE-XMS-07168] c 07 N71-11300  
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[NASA-CASE-MSC-13492-1] c 10 N71-28860  
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[NASA-CASE-MSC-14053-1] c 60 N74-12888  
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[NASA-CASE-MSC-14065-1] c 32 N74-26654  
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[NASA-CASE-MSC-14066-1] c 33 N74-27705  
Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c 32 N74-32598  
Pulse stretcher for narrow pulses  
[NASA-CASE-MSC-14130-1] c 33 N74-32711  
Peak holding circuit for extremely narrow pulses  
[NASA-CASE-MSC-14129-1] c 33 N75-18479  
Random pulse generator  
[NASA-CASE-MSC-14131-1] c 33 N75-19515  
Digital transmitter for data bus communications system  
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Low distortion receiver for bi-level baseband PCM waveforms  
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System for producing chroma signals  
[NASA-CASE-MSC-14683-1] c 74 N77-18893  
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[NASA-CASE-MSC-14939-1] c 32 N79-11264  
Apparatus and method for stabilized phase detection for binary signal tracking loops  
[NASA-CASE-MSC-18461-1] c 33 N79-11313  
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[NASA-CASE-MSC-18255-1] c 74 N80-33210  
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[NASA-CASE-MSC-16462-1] c 32 N82-31583  
**Lockheed Missiles and Space Co., Sunnyvale, Calif.**  
Device for handling heavy loads  
[NASA-CASE-XNP-04969] c 11 N69-27466  
Transient heat transfer gauge Patent  
[NASA-CASE-XNP-09802] c 33 N71-15641  
Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725  
Apparatus for detecting the amount of material in a resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397  
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[NASA-CASE-GSC-10945-1] c 21 N72-31637  
Coaxial inverted geometry transistor having buried emitter  
[NASA-CASE-ARC-10330-1] c 09 N73-32112  
Whole body measurement systems  
[NASA-CASE-MSC-13972-1] c 52 N74-10975  
Four phase logic systems  
[NASA-CASE-MSC-14240-1] c 33 N75-14957  
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[NASA-CASE-MSC-14182-1] c 27 N76-14264  
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[NASA-CASE-MSC-14270-1] c 27 N76-22377  
Optical alignment device  
[NASA-CASE-ARC-10932-1] c 74 N76-22993  
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[NASA-CASE-MSC-14831-1] c 25 N78-10225  
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[NASA-CASE-NPO-14303-1] c 44 N80-18550  
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**LTV Aerospace Corp., Dallas, Tex.**  
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**Marlin-Rockwell Corp., Jamestown, N. Y.**  
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[NASA-CASE-XNP-04389] c 28 N71-20942  
Tube sealing device Patent  
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**Martin Marietta Aerospace, Denver, Colo.**  
Method and apparatus for tensile testing of metal foil  
[NASA-CASE-LAR-10208-1] c 35 N76-18400  
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[NASA-CASE-FRC-11012-1] c 52 N80-23969  
Unne collection apparatus  
[NASA-CASE-MSC-18381-1] c 52 N81-28740  
**Martin Marietta Corp., Baltimore, Md.**  
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[NASA-CASE-XMF-01174] c 02 N70-41589  
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[NASA-CASE-XK-02342] c 05 N71-11199  
**Martin Marietta Corp., Denver, Colo.**  
Flexible/ridgifiable cable assembly  
[NASA-CASE-MSC-13512-1] c 15 N72-22485  
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[NASA-CASE-MSC-13907-1] c 10 N73-26230  
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[NASA-CASE-MFS-21671-1] c 33 N74-22885  
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[NASA-CASE-MSC-14245-1] c 18 N75-27041  
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[NASA-CASE-MSC-14273-1] c 34 N75-33342  
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[NASA-CASE-LAR-10970-1] c 33 N76-14372  
Method and apparatus for fluffing, separating, and cleaning fibers  
[NASA-CASE-LAR-11224-1] c 37 N78-18456  
Hearing aid malfunction detection system  
[NASA-CASE-MSC-14916-1] c 33 N78-10375  
Unne collection device  
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Positive isolation disconnect  
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Unne collection device  
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[NASA-CASE-MSC-18796-1] c 24 N82-26389  
**Maryland Univ., College Park.**  
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[NASA-CASE-GSC-10216-1] c 23 N71-26722  
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[NASA-CASE-XMS-03537] c 15 N69-21471  
Hydraulic drive mechanism Patent  
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Electronic amplifier with power supply switching Patent  
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[NASA-CASE-XMS-02159] c 10 N71-22961  
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[NASA-CASE-HQN-10541-1] c 07 N71-26291  
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[NASA-CASE-HQN-10541-4] c 16 N71-27183  
Compact spectroradiometer  
[NASA-CASE-HQN-10683] c 14 N71-34389



- Optical frequency waveguide and transmission system  
[NASA-CASE-HQN-10541-3] c 23 N72-23695
- Display research collision warning system  
[NASA-CASE-HQN-10703] c 21 N73-13643
- Transparent switchboard  
[NASA-CASE-MSC-13746-1] c 10 N73-32143
- Vapor deposition apparatus  
[NASA-CASE-HQN-10462] c 25 N75-29192
- Fault tolerant clock apparatus utilizing a controlled minority of clock elements  
[NASA-CASE-MSC-12531-1] c 35 N75-30504
- McDonnell Aircraft Co., St. Louis, Mo.**  
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[NASA-CASE-XMS-01108] c 15 N69-24322
- Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c 14 N69-27459
- Apparatus for purging systems handling toxic, corrosive, noxious and other fluids. Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089
- Power supply circuit. Patent  
[NASA-CASE-XMS-00913] c 10 N71-23543
- Multiple circuit protector device  
[NASA-CASE-XMS-02744] c 33 N75-27249
- Apparatus for welding sheet material  
[NASA-CASE-XMS-01330] c 37 N75-27376
- Fused switch  
[NASA-CASE-XMS-01244-1] c 33 N79-33393
- Cooling system for high speed aircraft  
[NASA-CASE-LAR-12406-1] c 05 N81-26114
- McDonnell-Douglas Astronautics Co., Huntington Beach, Calif.**  
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[NASA-CASE-MFS-22938-1] c 34 N76-18374
- McDonnell-Douglas Astronautics Co., Santa Monica, Calif.**  
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[NASA-CASE-NPO-10863] c 06 N70-11251
- Method of polymerizing perfluorobutadiene. Patent application  
[NASA-CASE-NPO-10447] c 06 N70-11252
- McDonnell-Douglas Astronautics Co., St. Louis, Mo.**  
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[NASA-CASE-MFS-23642-2] c 20 N78-27176
- McDonnell-Douglas Corp., Huntington Beach, Calif.**  
Variable direction force coupler  
[NASA-CASE-MFS-20317] c 15 N73-13463
- Potable water dispenser  
[NASA-CASE-MFS-21115-1] c 54 N74-12779
- Metering gun for dispensing precisely measured charges of fluid  
[NASA-CASE-MFS-21163-1] c 54 N74-17853
- Airlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136
- Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c 35 N74-26945
- Thrust-isolating mounting  
[NASA-CASE-MFS-21680-1] c 18 N74-27397
- Device for measuring tensile forces  
[NASA-CASE-MFS-21728-1] c 35 N74-27865
- Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410
- Phase-locked servo system  
[NASA-CASE-MFS-22073-1] c 33 N75-13139
- Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612
- Meter for use in detecting tension in straps having predetermined elastic characteristics  
[NASA-CASE-MFS-22189-1] c 35 N75-19615
- Latching device  
[NASA-CASE-MFS-21606-1] c 37 N75-19685
- Device for use in loading tension members  
[NASA-CASE-MFS-21488-1] c 14 N75-24794
- McDonnell-Douglas Corp., Long Beach, Calif.**  
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[NASA-CASE-MSC-18723-1] c 39 N81-24470
- McDonnell-Douglas Corp., Newport Beach, Calif.**  
Method of making membranes  
[NASA-CASE-XNP-04264] c 03 N69-21337
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Rocket nozzle test method. Patent  
[NASA-CASE-NPO-10311] c 31 N71-15643
- Reaction of fluorine with polyperfluoropolylenes  
[NASA-CASE-NPO-10862] c 06 N72-22107
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[NASA-CASE-NPO-10863-2] c 06 N72-25152
- Electrolytic cell structure  
[NASA-CASE-LAR-11042-1] c 33 N75-27252
- Prevention of hydrogen embrittlement of high strength steel by hydrazine compositions  
[NASA-CASE-NPO-12122-1] c 24 N76-14203
- Utilization of oxygen difluoride for syntheses of fluoropolymers  
[NASA-CASE-NPO-12061-1] c 27 N76-16228
- McDonnell-Douglas Corp., St. Louis, Mo.**  
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[NASA-CASE-GSC-11304-1] c 06 N72-21105
- Passive propellant system  
[NASA-CASE-MFS-23642-1] c 20 N80-10278
- Medical Sciences Research Foundation, San Francisco, Calif.**  
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[NASA-CASE-NPO-12119-1] c 52 N75-15270
- Mellon Inst., Pittsburgh, Pa.**  
Instrument for measuring torsional creep and recovery. Patent  
[NASA-CASE-XLE-01481] c 14 N71-10781
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Television simulation for aircraft and space flight. Patent  
[NASA-CASE-XFR-03107] c 09 N71-19449
- Compact solar still. Patent  
[NASA-CASE-XMS-04533] c 15 N71-23086
- Metcom, Inc., Salem, Mass.**  
Tuning arrangement for an electron discharge device or the like. Patent  
[NASA-CASE-XNP-09771] c 09 N71-24841
- Methodist Hospital, Houston, Tex.**  
Snap-in compressible biomedical electrode  
[NASA-CASE-MSC-14623-1] c 52 N77-28717
- Microwave Electronics Corp., Palo Alto, Calif.**  
Folded traveling wave maser structure. Patent  
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- Superconducting magnet. Patent  
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- Microwave Research Corp., North Andover, Mass.**  
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[NASA-CASE-NPO-13568-1] c 32 N76-21365
- Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278
- Midwest Research Inst., Kansas City, Mo.**  
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[NASA-CASE-XMF-10753] c 06 N71-11237
- Inorganic solid film lubricants. Patent  
[NASA-CASE-XMF-03988] c 15 N71-21403
- Fluonated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098
- Milliken (D. B.) Co., Arcadia, Calif.**  
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[NASA-CASE-LAR-10686] c 14 N71-28935
- Minneapolis-Honeywell Regulator Co., Minn.**  
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[NASA-CASE-XMS-02182] c 10 N71-28783
- Mississippi Methodist Rehabilitation Center, Jackson.**  
Universal connectors for joining strings  
[NASA-CASE-LAR-12744-1] c 37 N81-31551
- Modern Machine and Tool Co., Newport News, Va.**  
Means for accommodating large overstrain in lead wires  
[NASA-CASE-LAR-10168-1] c 33 N74-22865
- Monsanto Co., St. Louis, Mo.**  
Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910
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Perfluoro alkylene dioxy-bis-(4-phthalic anhydrides and oxy-bis(perfluoroalkyleneoxyphthalic anhydrides)  
[NASA-CASE-MFS-22356-1] c 23 N75-30256
- Polymides of ether-linked aryl tetracarboxylic dianhydrides  
[NASA-CASE-MFS-22355-1] c 23 N76-15268
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[NASA-CASE-XMF-08665] c 10 N71-19467
- Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229
- Quartz ball valve  
[NASA-CASE-NPO-14473-1] c 37 N80-23654
- Method and apparatus for quadrupole-shift-key and linear phase modulation  
[NASA-CASE-NPO-14444-1] c 33 N81-15192
- PN lock indicator for dithered PN code tracking loop  
[NASA-CASE-NPO-14435-1] c 33 N81-33405
- Motorola, Inc., Scottsdale, Ariz.**  
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- Digital frequency discriminator. Patent  
[NASA-CASE-MFS-14322] c 08 N71-18692
- Phase modulator. Patent  
[NASA-CASE-MSC-13201-1] c 07 N71-28429
- Capacitance multiplier and filter synthesizing network  
[NASA-CASE-NPO-11948-1] c 33 N74-32712
- Quadrupole demodulation  
[NASA-CASE-GSC-12137-1] c 33 N78-32338
- Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539
- MB Associates, San Ramon, Calif.**  
Hypervelocity gun  
[NASA-CASE-XLE-03186-1] c 09 N79-21084

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## Narco Scientific, Houston, Tex.

- Dual physiological rate measurement instrument  
[NASA-CASE-MSC-20078-1] c 52 N82-32971
- National Academy of Sciences - National Research Council, Washington, D. C.**  
Gyrator employing field effect transistors  
[NASA-CASE-MFS-21433] c 09 N73-20232
- Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004
- Optical data processing using paraboloidal mirror segments  
[NASA-CASE-GSC-11296-1] c 23 N73-30666
- Power supply for carbon dioxide lasers  
[NASA-CASE-GSC-11222-1] c 16 N73-32391
- High field CdS detector for infrared radiation  
[NASA-CASE-LAR-11027-1] c 35 N74-18088
- Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c 35 N74-26946
- Stagnation pressure probe  
[NASA-CASE-LAR-11139-1] c 35 N74-32878
- Integrated P-channel MOS gyrator  
[NASA-CASE-MFS-22343-1] c 33 N74-34638
- Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c 25 N75-12086
- Method of preparing water purification membranes  
[NASA-CASE-ARC-10643-1] c 25 N75-12087
- Method of forming aperture plate for electron microscope  
[NASA-CASE-ARC-10448-2] c 74 N75-12732
- Dually mode locked Nd:YAG laser  
[NASA-CASE-GSC-11746-1] c 36 N75-19654
- Anti-gravity device  
[NASA-CASE-MFS-22758-1] c 70 N75-26789
- Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c 35 N75-27331
- Integrable power gyrator  
[NASA-CASE-MFS-22342-1] c 33 N75-30428
- Two stage light gas-plasma projectile accelerator  
[NASA-CASE-MFS-22287-1] c 75 N76-14931
- Micrometeoroid velocity and trajectory analyzer  
[NASA-CASE-GSC-11892-1] c 35 N76-15433
- Moving particle composition analyzer  
[NASA-CASE-GSC-11889-1] c 35 N76-16393
- Self-energized plasma compressor  
[NASA-CASE-MFS-22145-2] c 75 N76-17951
- Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525
- Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408
- Method for making a hot wire anemometer and product thereof  
[NASA-CASE-ARC-10900-1] c 35 N77-24454
- Length controlled stabilized mode-lock Nd:YAG laser  
[NASA-CASE-GSC-11571-1] c 36 N77-25499
- Method of growing composites of the type exhibiting the Soret effect  
[NASA-CASE-MFS-22926-1] c 24 N77-27187
- Method and apparatus for splitting a beam of energy  
[NASA-CASE-GSC-12083-1] c 73 N78-32848
- Cantilever mounted resilient pad gas bearing  
[NASA-CASE-LEW-12569-1] c 37 N79-10418
- Massively parallel processor computer  
[NASA-CASE-GSC-12223-1] c 60 N79-27864
- Shock isolator for operating a diode laser on a closed-cycle refrigerator  
[NASA-CASE-GSC-12297-1] c 37 N79-28549
- An improved synthesis of 2,4,8,10-tetroxaspiro (5,5) undecane  
[NASA-CASE-ARC-11243-2] c 23 N80-31472
- Pocket ECG electrode  
[NASA-CASE-ARC-11258-1] c 52 N80-33081
- Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612
- Microwave integrated circuit for Josephson voltage standards  
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- Autonomous navigation system  
[NASA-CASE-ARC-11257-1] c 04 N81-21047
- Phosphorus-containing bisimide resins  
[NASA-CASE-ARC-11321-1] c 27 N81-27272
- Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174



Nical ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505

**National Aeronautics and Space Administration, Washington, D. C.**

Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485

Waveguide mixer  
[NASA-CASE-ERC-10179] c 07 N72-20141

Semiconductor-ferroelectric memory device  
[NASA-CASE-ERC-10307] c 08 N72-21198

Shielded cathode mode bulk effect devices  
[NASA-CASE-ERC-10119] c 26 N72-21701

Fabrication of single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c 09 N72-22199

Two color horizon sensor  
[NASA-CASE-ERC-10174] c 14 N72-25409

Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428

Optical pump and driver system for lasers  
[NASA-CASE-ERC-10283] c 16 N72-25485

Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437

Head-up attitude display  
[NASA-CASE-ERC-10392] c 21 N73-14692

System for indicating direction of intruder aircraft  
[NASA-CASE-ERC-10226-1] c 14 N73-16483

Aircraft control system  
[NASA-CASE-ERC-10439] c 02 N73-19004

Display system  
[NASA-CASE-ERC-10350] c 14 N73-20474

Method and apparatus for measuring solar activity and atmospheric radiation effects  
[NASA-CASE-ERC-10276] c 14 N73-26432

Doppler shift system  
[NASA-CASE-HQN-10740-1] c 72 N74-19310

Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c 71 N74-21014

Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653

Physical correction filter for improving the optical quality of an image  
[NASA-CASE-HQN-10542-1] c 74 N75-25706

Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040

Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c 33 N75-27251

Vapor deposition apparatus  
[NASA-CASE-HQN-10462] c 25 N75-29192

Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473

Rechargeable battery which combats shape change of the zinc anode  
[NASA-CASE-HQN-10862-1] c 44 N76-29699

System and method for tracking a signal source  
[NASA-CASE-HQN-10880-1] c 17 N78-17140

Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c 73 N78-19920

Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721

Safety flywheel  
[NASA-CASE-HQN-10888-1] c 44 N79-14527

Flow diverter valve and flow diversion method  
[NASA-CASE-HQN-00573-1] c 37 N79-33468

Glass compositions with a high modulus of elasticity  
[NASA-CASE-HQN-10274-1] c 27 N82-29451

High modulus invert analog glass compositions containing beryllia  
[NASA-CASE-HQN-10931-2] c 27 N82-29452

Non-toxic invert analog glass compositions of high modulus  
[NASA-CASE-HQN-10328-2] c 27 N82-29454

High modulus rare earth and beryllium containing silicate glass compositions  
[NASA-CASE-HQN-10595-1] c 27 N82-29455

**National Bureau of Standards, Boulder, Colo.**

Densitometer Patent  
[NASA-CASE-XLE-00688] c 14 N70-41330

**National Oceanic and Atmospheric Administration, Boulder, Colo.**

Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175

**National Research Corp., Cambridge, Mass.**

Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c 14 N73-30390

Ultrahigh vacuum measuring ionization gauge  
[NASA-CASE-XLA-05087] c 14 N73-30391

Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c 14 N73-30394

Ultrahigh vacuum gauge having two collector electrodes  
[NASA-CASE-LAR-02743] c 14 N73-32324

Rock sampling  
[NASA-CASE-XNP-10007-1] c 46 N74-23068

Rock sampling  
[NASA-CASE-XNP-09755] c 46 N74-23069

**National Science Foundation, Washington, D.C.**

Laser apparatus  
[NASA-CASE-GSC-12237-1] c 36 N80-14384

**New England Medical Center Hospitals, Boston, Mass.**

Determination of antimicrobial susceptibilities on infected unnes without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750

**North American Aviation, Inc., Canoga Park, Calif.**

Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443

Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339

Safety-type locking pin  
[NASA-CASE-MFS-18495] c 15 N72-11385

Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum  
[NASA-CASE-MFS-13130] c 10 N72-17173

**North American Aviation, Inc., Downey, Calif.**

Heat shield oven  
[NASA-CASE-XMS-04318] c 15 N69-27871

Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701

High pressure air valve Patent  
[NASA-CASE-MSC-11010] c 15 N71-19485

Load relieving device Patent  
[NASA-CASE-XMS-06329-1] c 15 N71-20441

Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882

Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365

Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234

**North American Aviation, Inc., El Segundo, Calif.**

Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c 31 N71-15647

Expanding center probe and drogue Patent  
[NASA-CASE-XMS-03613] c 31 N71-16346

Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436

High impedance measuring apparatus Patent  
[NASA-CASE-XMS-08589-1] c 09 N71-20569

Latching mechanism Patent  
[NASA-CASE-XMS-03745] c 15 N71-21076

Tube dimpling tool Patent  
[NASA-CASE-XMS-06876] c 15 N71-21536

Positive locking check valve Patent  
[NASA-CASE-XMS-09310] c 15 N71-22706

Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828

Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c 33 N71-24876

Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c 28 N71-28849

Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852

Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c 27 N71-28929

Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937

Universal restrainer and joint Patent  
[NASA-CASE-XNP-02278] c 15 N71-28951

Method and device for cooling Patent  
[NASA-CASE-HQN-00938] c 33 N71-29053

**North American Aviation, Inc., Los Angeles, Calif.**

Method and system for respiration analysis Patent  
[NASA-CASE-XFR-08403] c 05 N71-11202

**North American Aviation, Inc., Torrance, Calif.**

Method and apparatus for detection and location of microleaks Patent  
[NASA-CASE-XMF-02307] c 14 N71-10779

**North American Aviation, Inc., Woodland Hills, Calif.**

Fluid pressure balanced seal  
[NASA-CASE-XGS-01286-1] c 37 N79-33469

**North American Philips Co., Inc., Tarrytown, N.Y.**

Linear magnetic bearings  
[NASA-CASE-GSC-12582-1] c 37 N81-16469

**North American Rockwell Corp., Canoga Park, Calif.**

Noncontaminating swabs  
[NASA-CASE-MFS-18100] c 15 N72-11390

Observation window for a gas confining chamber  
[NASA-CASE-NPO-10890] c 11 N73-12265

Droplet monitoring probe  
[NASA-CASE-NPO-10985] c 14 N73-20478

Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c 10 N73-25243

Heat flow calorimeter  
[NASA-CASE-GSC-11434-1] c 34 N74-27859

**North American Rockwell Corp., Downey, Calif.**

Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434

Latching mechanism Patent  
[NASA-CASE-MSC-15474-1] c 15 N71-26162

Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170

Frangible link  
[NASA-CASE-MSC-11849-1] c 15 N72-22488

Impact monitoring apparatus  
[NASA-CASE-MSC-15626-1] c 14 N72-25411

Bonding or repairing process  
[NASA-CASE-MSC-12357] c 15 N73-12489

Self-cycling fluid heater  
[NASA-CASE-MSC-15567-1] c 33 N73-16918

Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956

Apparatus for remote handling of materials  
[NASA-CASE-LAR-10634-1] c 37 N74-18123

Gran refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c 37 N75-19683

**North American Rockwell Corp., El Segundo, Calif.**

Apparatus for testing wiring harness by vibration generating means  
[NASA-CASE-MSC-15158-1] c 14 N72-17325

**North American Rockwell Corp., Los Angeles, Calif.**

Tactile sensing means for prosthetic limbs  
[NASA-CASE-MFS-16570-1] c 05 N73-32013

**North Carolina State Univ., Raleigh.**

Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584

Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206

**Northeastern Univ., Boston, Mass.**

Pulse-width modulation multiplier Patent  
[NASA-CASE-XER-09213] c 07 N71-12390

**Northrop Corp., Hawthorne, Calif.**

Shock tube bypass piston tunnel  
[NASA-CASE-NPO-12109] c 11 N72-22245

Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040

**Northrop Nortronics, Palos Verdes Peninsula, Calif.**

Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c 05 N72-25121

Valve seat  
[NASA-CASE-NPO-10606] c 15 N72-25451

**Northrop Space Labs., Hawthorne, Calif.**

Method of evaluating moisture barrier properties of encapsulating materials Patent  
[NASA-CASE-NPO-10051] c 18 N71-24934

**Nortronics, Palos Verdes Peninsula, Calif.**

Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618

Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546

Method of removing insulated material from insulated wires  
[NASA-CASE-FRC-10038] c 15 N72-20444

**Notre Dame Univ., Ind.**

Synthesis of polymers schiff bases by schiff-base exchange reactions Patent  
[NASA-CASE-XMF-08651] c 06 N71-11236

Direct synthesis of polymers schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c 06 N71-11239

Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c 06 N71-11242

Synthesis of polymers schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243

Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740

**National Aeronautics and Space Administration, Ames Research Center, Moffett Field, Calif.**

Nonmagnetic thermal motor for a magnetometer  
[NASA-CASE-XAR-03786] c 09 N69-21313

Balanced bellows spirometer  
[NASA-CASE-XAR-01547] c 05 N69-21473

Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423

Variable stiffness polymers damper  
[NASA-CASE-XAC-11225] c 14 N69-27486

Shock-layer radiation measurement  
[NASA-CASE-XAC-02970] c 14 N69-39896

Protective circuit of the spark gap type  
[NASA-CASE-XAC-08981] c 09 N69-39897

Apparatus for coupling a plurality of ungrounded circuits to a grounded circuit Patent  
[NASA-CASE-XAC-00086] c 09 N70-33182



Two-plane balance Patent  
[NASA-CASE-XAC-00073] c 14 N70-34813

Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815

Differential pressure cell Patent  
[NASA-CASE-XAC-00042] c 14 N70-34816

High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817

Magnetically centered liquid column float Patent  
[NASA-CASE-XAC-00030] c 14 N70-34820

Propeller blade loading control Patent  
[NASA-CASE-XAC-00139] c 02 N70-34856

Temperature compensated solid state differential amplifier Patent  
[NASA-CASE-XAC-00435] c 09 N70-35440

High speed low level electrical stepping switch Patent  
[NASA-CASE-XAC-00060] c 09 N70-39915

Analog-to-digital conversion system Patent  
[NASA-CASE-XAC-00404] c 08 N70-40125

Null-type vacuum microbalance Patent  
[NASA-CASE-XAC-00472] c 15 N70-40180

Thermo-protective device for balances Patent  
[NASA-CASE-XAC-00648] c 14 N70-40400

Three-axis controller Patent  
[NASA-CASE-XAC-01404] c 05 N70-41581

Electric arc device for heating gases Patent  
[NASA-CASE-XAC-00319] c 25 N70-41628

Dynamic sensor Patent  
[NASA-CASE-XAC-02877] c 14 N70-41681

Universal pilot restraint suit and body support therefor Patent  
[NASA-CASE-XAC-00405] c 05 N70-41819

Proportional controller Patent  
[NASA-CASE-XAC-03392] c 03 N70-41954

Force transducer Patent  
[NASA-CASE-XAC-01101] c 14 N70-41957

Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193

Telemeter adaptable for implanting in an animal Patent  
[NASA-CASE-XAC-05706] c 05 N71-12342

Gyration type circuit Patent  
[NASA-CASE-XAC-10608-1] c 09 N71-12517

Ultraviolet resonance lamp Patent  
[NASA-CASE-ARC-10030] c 09 N71-12521

Differential temperature transducer Patent  
[NASA-CASE-XAC-00812] c 14 N71-15598

Multiple circuit switch apparatus with improved pivot actuator structure Patent  
[NASA-CASE-XAC-03777] c 10 N71-15909

Method of planetary atmospheric investigation using a split-trajectory dual flyby mode Patent  
[NASA-CASE-XAC-08494] c 30 N71-15990

High efficiency multivibrator Patent  
[NASA-CASE-XAC-00942] c 10 N71-16042

Apparatus for measuring conductivity and velocity of plasma utilizing a plurality of sensing coils positioned in the plasma Patent  
[NASA-CASE-XAC-05695] c 25 N71-16073

Flight craft Patent  
[NASA-CASE-XAC-02058] c 02 N71-16087

Three-axis finger tip controller for switches Patent  
[NASA-CASE-XAC-02405] c 09 N71-16089

Electrostatic charged particle analyzer having deflection members shaped according to the periodic voltage applied thereto Patent  
[NASA-CASE-XAC-05506-1] c 24 N71-16095

Inertial reference apparatus Patent  
[NASA-CASE-XAC-03107] c 23 N71-16098

Fastener apparatus Patent  
[NASA-CASE-ARC-10140-1] c 15 N71-17653

Stabilization of gravity oriented satellites Patent  
[NASA-CASE-XAC-01591] c 31 N71-17729

Microwave flaw detector Patent  
[NASA-CASE-ARC-10009-1] c 15 N71-17822

Hypervelocity gun Patent  
[NASA-CASE-XAC-05902] c 11 N71-18578

Nonlinear analog-to-digital converter Patent  
[NASA-CASE-XAC-04031] c 08 N71-18594

Demodulation system Patent  
[NASA-CASE-XAC-04030] c 10 N71-19472

Phase quadrature-plural channel data transmission system Patent  
[NASA-CASE-XAC-06302] c 08 N71-19763

Two force component measuring device Patent  
[NASA-CASE-XAC-04886-1] c 14 N71-20439

Attitude controls for VTOL aircraft Patent  
[NASA-CASE-XAC-08972] c 02 N71-20570

Electric arc apparatus Patent  
[NASA-CASE-XAC-01677] c 09 N71-20816

Inertia diaphragm pressure transducer Patent  
[NASA-CASE-XAC-02981] c 14 N71-21072

Strapping apparatus for plural test tubes Patent  
[NASA-CASE-XAC-06956] c 15 N71-21177

Exposure system for animals Patent  
[NASA-CASE-XAC-05333] c 11 N71-22875

Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c 09 N71-23021

Hall current measuring apparatus having a series resistor for temperature compensation Patent  
[NASA-CASE-XAC-01662] c 14 N71-23037

Transfer valve Patent  
[NASA-CASE-XAC-01158] c 15 N71-23051

Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161

Method and apparatus for continuously monitoring blood oxygenation, blood pressure, pulse rate and the pressure pulse curve utilizing an ear oximeter as transducer Patent  
[NASA-CASE-XAC-05422] c 04 N71-23185

Feedback integrator with grounded capacitor Patent  
[NASA-CASE-XAC-10607] c 10 N71-23669

Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790

Control device Patent  
[NASA-CASE-XAC-10019] c 15 N71-23809

Means for suppressing or attenuating bending motion of elastic bodies Patent  
[NASA-CASE-XAC-05632] c 32 N71-23971

Device for measuring pressure Patent  
[NASA-CASE-XAC-04458] c 14 N71-24232

Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597

Skeletal stressing method and apparatus Patent  
[NASA-CASE-ARC-10100-1] c 05 N71-24738

Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739

Deep space monitor communication satellite system Patent  
[NASA-CASE-XAC-06029-1] c 31 N71-24813

Laser fluid velocity detector Patent  
[NASA-CASE-XAC-10770-1] c 16 N71-24828

Transient video signal recording with expanded playback Patent  
[NASA-CASE-ARC-10003-1] c 09 N71-25866

Thermally cycled magnetometer Patent  
[NASA-CASE-XAC-03740] c 14 N71-26135

Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673

Energy limiter for hydraulic actuators Patent  
[NASA-CASE-ARC-10131-1] c 15 N71-27754

Multivibrator circuit with means to prevent false triggering from supply voltage fluctuations Patent  
[NASA-CASE-ARC-10137-1] c 09 N71-28468

Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619

Line following servosystem Patent  
[NASA-CASE-XAC-00001] c 15 N71-28952

Mechanically limited, electrically operated hydraulic valve system for aircraft controls Patent  
[NASA-CASE-XAC-00048] c 02 N71-29128

Precision rectifier with FET switching means Patent  
[NASA-CASE-ARC-10101-1] c 09 N71-33109

Solar cell Patent  
[NASA-CASE-ARC-10050] c 03 N71-33409

Phase shift circuit apparatus  
[NASA-CASE-ARC-10269-1] c 10 N72-16172

High intensity radiant energy pulse source having means for opening shutter when light flux has reached a desired level  
[NASA-CASE-ARC-10178-1] c 09 N72-17152

Telemetry actuated switch  
[NASA-CASE-ARC-10105] c 09 N72-17153

Active RC networks  
[NASA-CASE-ARC-10020] c 10 N72-17172

Apparatus for automatically stabilizing the attitude of a nonguided vehicle  
[NASA-CASE-ARC-10134] c 30 N72-17873

Flexible fire retardant foam  
[NASA-CASE-ARC-10180-1] c 28 N72-20767

Method and apparatus for swept-frequency impedance measurements of welds  
[NASA-CASE-ARC-10176-1] c 15 N72-21464

Space suit having improved waist and torso movement  
[NASA-CASE-ARC-10275-1] c 05 N72-22092

RF controlled solid state switch  
[NASA-CASE-ARC-10136-1] c 09 N72-22202

Wide range dynamic pressure sensor  
[NASA-CASE-ARC-10263-1] c 14 N72-22438

Method and apparatus for measuring the damping characteristics of a structure  
[NASA-CASE-ARC-10154-1] c 14 N72-22440

Magnetic position detection method and apparatus  
[NASA-CASE-ARC-10179-1] c 21 N72-22619

Fluidic proportional thruster system  
[NASA-CASE-ARC-10106-1] c 28 N72-22769

Thermoelectric radiometer utilizing polymer film  
[NASA-CASE-ARC-10138-1] c 14 N72-24477

Polymeric vehicles as carriers for sulfonic acid salt of nitrosubstituted aromatic amines  
[NASA-CASE-ARC-10325] c 06 N72-25147

Stereoscopic television system and apparatus  
[NASA-CASE-ARC-10160-1] c 23 N72-27728

Metallic intrusion detector system  
[NASA-CASE-ARC-10265-1] c 10 N72-28240

Apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c 14 N72-29464

Nondispersive gas analyzing method and apparatus wherein radiation is serially passed through a reference and unknown gas  
[NASA-CASE-ARC-10308-1] c 06 N72-31141

Two degree inverted flexure  
[NASA-CASE-ARC-10345-1] c 15 N73-12488

Intumescent paint containing nitrile rubber  
[NASA-CASE-ARC-10196-1] c 18 N73-13562

Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10467-1] c 09 N73-14214

Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c 09 N73-20231

Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477

Multiple pass reimagining optical system  
[NASA-CASE-ARC-10194-1] c 23 N73-20741

Intruder detection system  
[NASA-CASE-ARC-10097-2] c 07 N73-25160

Interferometric rotation sensor  
[NASA-CASE-ARC-10278-1] c 14 N73-25463

Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005

Temperature controller for a fluid cooled garment  
[NASA-CASE-ARC-10599-1] c 05 N73-26071

Visual examination apparatus  
[NASA-CASE-ARC-10329-1] c 05 N73-26072

Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572

Infrared tunable laser  
[NASA-CASE-ARC-10463-1] c 09 N73-32111

Low power electromagnetic flowmeter providing accurate zero set  
[NASA-CASE-ARC-10362-1] c 14 N73-32326

Hand-held photomicroscope  
[NASA-CASE-ARC-10468-1] c 14 N73-33361

Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397

Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812

Flexible fire retardant polyisocyanate modified neoprene foam  
[NASA-CASE-ARC-10180-1] c 27 N74-12814

Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c 35 N74-15093

Bimetallic fluid displacement apparatus  
[NASA-CASE-ARC-10441-1] c 35 N74-15126

Automatic real-time pair-feeding system for animals  
[NASA-CASE-ARC-10302-1] c 51 N74-15778

Overvoltage protection network  
[NASA-CASE-ARC-10197-1] c 33 N74-17929

Ultrasonic biomedical measuring and recording apparatus  
[NASA-CASE-ARC-10597-1] c 52 N74-20726

Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156

High speed shutter  
[NASA-CASE-ARC-10516-1] c 70 N74-21300

Bio-isolated dc operational amplifier  
[NASA-CASE-ARC-10596-1] c 33 N74-21851

Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c 52 N74-22771

Chromato-fluorographic drug detector  
[NASA-CASE-ARC-10633-1] c 25 N74-26947

Intumescent composition, foamed product prepared therewith and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037

Photomultiplier circuit including means for rapidly reducing the sensitivity thereof  
[NASA-CASE-ARC-10593-1] c 33 N74-27682

G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806] c 06 N74-27872

Concentric differential gearing arrangement  
[NASA-CASE-ARC-10462-1] c 37 N74-27901

Measurement of plasma temperature and density using radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156

Abating exhaust noises in jet engines  
[NASA-CASE-ARC-10712-1] c 07 N74-33218

Solid medium thermal engine  
[NASA-CASE-ARC-10461-1] c 44 N74-33379



Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c 25 N75-12086  
Method of preparing water purification membranes  
[NASA-CASE-ARC-10643-1] c 25 N75-12087  
Method of forming aperture plate for electron microscope  
[NASA-CASE-ARC-10448-2] c 74 N75-12732  
Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c 05 N75-12930  
Wind tunnel flow generation section  
[NASA-CASE-ARC-10710-1] c 09 N75-12969  
Continuous Fourier transform method and apparatus  
[NASA-CASE-ARC-10466-1] c 60 N75-13539  
Dual wavelength scanning Doppler velocimeter  
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[NASA-CASE-ARC-10716-1] c 35 N77-20399  
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[NASA-CASE-ARC-10970-1] c 36 N77-25501  
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[NASA-CASE-ARC-10916-1] c 52 N78-10686  
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[NASA-CASE-ARC-10639-1] c 35 N78-13400  
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[NASA-CASE-ARC-11325-1] c 37 N82-22496

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[NASA-CASE-ARC-11158-1] c 09 N82-24212

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[NASA-CASE-ARC-11256-1] c 15 N82-24272

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Preparation of crosslinked 1,2,4-oxadiazole polymer  
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Improved process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N82-26462

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[NASA-CASE-ARC-11361-1] c 35 N82-26635

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[NASA-CASE-ARC-11314-1] c 54 N82-26987

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[NASA-CASE-ARC-11267-2] c 23 N82-28353

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[NASA-CASE-ARC-11359-1] c 27 N82-28444

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[NASA-CASE-ARC-11409-1] c 27 N82-32490

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**Electronics Research Center, Cambridge, Mass.**  
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[NASA-CASE-ERC-10072] c 09 N70-11148

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[NASA-CASE-ERC-10089] c 23 N72-17747

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**Goddard Inst. for Space Studies, New York.**  
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[NASA-CASE-GSC-11989-1] c 74 N77-28932

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[NASA-CASE-GSC-12017-1] c 32 N77-30308

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[NASA-CASE-GSC-12143-1] c 35 N77-32456

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[NASA-CASE-GSC-11839-3] c 60 N77-32731

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[NASA-CASE-GSC-11976-1] c 43 N78-10529

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**National Aeronautics and Space Administration.**  
**Goddard Space Flight Center, Greenbelt, Md.**  
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[NASA-CASE-XGS-03429] c 03 N69-21330

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[NASA-CASE-XGS-03865] c 14 N69-21363

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[NASA-CASE-XGS-08266] c 14 N69-27432

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[NASA-CASE-XLE-00164] c 28 N70-35422  
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[NASA-CASE-XLE-00164] c 15 N70-36411  
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[NASA-CASE-XLE-00397] c 15 N70-36492  
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[NASA-CASE-XLE-00222] c 02 N70-37939  
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[NASA-CASE-XLA-00350] c 02 N70-38011  
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[NASA-CASE-XLE-00345] c 15 N70-38020  
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[NASA-CASE-XLE-00455] c 28 N70-38197  
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[NASA-CASE-XLE-00231] c 17 N70-38198  
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[NASA-CASE-XLE-00111] c 28 N70-38199  
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[NASA-CASE-XLE-00323] c 28 N70-38505  
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[NASA-CASE-XLE-00243] c 14 N70-38602  
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[NASA-CASE-XLE-00057] c 28 N70-38711  
Multistage multiple-reentry turbine  
[NASA-CASE-XLE-00085] c 28 N70-39895  
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[NASA-CASE-XLE-00353] c 18 N70-39897  
Telescoping-spike supersonic inlet for aircraft engines  
[NASA-CASE-XLE-00005] c 28 N70-39899  
High temperature spark plug  
[NASA-CASE-XLE-00660] c 28 N70-39925  
Low viscosity magnetic fluid obtained by the colloidal suspension of magnetic particles  
[NASA-CASE-XLE-01512] c 12 N70-40124  
Apparatus for absorbing and measuring power  
[NASA-CASE-XLE-00720] c 14 N70-40201  
Device for directionally controlling electromagnetic radiation  
[NASA-CASE-XLE-01716] c 09 N70-40234  
Method for continuous variation of propellant flow and thrust in propulsive devices  
[NASA-CASE-XLE-00177] c 28 N70-40367



Apparatus for increasing ion engine beam density Patent  
[NASA-CASE-XLE-00519] c 28 N70-41576

Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579

Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41646

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[NASA-CASE-XLE-00150] c 28 N70-41818

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[NASA-CASE-XLE-00011] c 14 N70-41946

Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41992

Apparatus for positioning and loading a test specimen Patent  
[NASA-CASE-XLE-01300] c 15 N70-41993

Liquid flow sight assembly Patent  
[NASA-CASE-XLE-02998] c 14 N70-42074

Inductive liquid level detection system Patent  
[NASA-CASE-XLE-01609] c 14 N71-10500

Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560

Electrostatic thruster with improved insulators Patent  
[NASA-CASE-XLE-01902] c 28 N71-10574

Thin-walled pressure vessel Patent  
[NASA-CASE-XLE-04677] c 15 N71-10577

Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607

Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-01765] c 18 N71-10772

Molecular beam velocity selector Patent  
[NASA-CASE-XLE-01533] c 11 N71-10777

Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent  
[NASA-CASE-XLE-01246] c 14 N71-10797

Capacitor and method of making same Patent  
[NASA-CASE-XLE-01364-1] c 09 N71-13522

Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035

Electrostatic ion engine having a permanent magnetic circuit Patent  
[NASA-CASE-XLE-01124] c 28 N71-14043

Split welding chamber Patent  
[NASA-CASE-XLE-01153] c 15 N71-14932

Method and apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917] c 15 N71-15597

Method of making a diffusion bonded refractory coating Patent  
[NASA-CASE-XLE-01604-2] c 15 N71-15610

Black-body furnace Patent  
[NASA-CASE-XLE-01399] c 33 N71-15625

Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01988] c 27 N71-15634

Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635

Automatically deploying nozzle exit cone extension Patent  
[NASA-CASE-XLE-01640] c 31 N71-15637

High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-00726] c 17 N71-15644

Method of making a rocket motor casing Patent  
[NASA-CASE-XLE-00409] c 28 N71-15658

Rocket motor casing Patent  
[NASA-CASE-XLE-05689] c 28 N71-15659

Electrostatic ion rocket engine Patent  
[NASA-CASE-XLE-02066] c 28 N71-15661

High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-02991] c 17 N71-16025

Nickel-base alloy containing Mo-W-Al-Cr-Ta-Zr-C-Nb-B Patent  
[NASA-CASE-XLE-02082] c 17 N71-16026

Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-16052

Process of casting heavy slips Patent  
[NASA-CASE-XLE-00106] c 15 N71-16076

Boiler for generating high quality vapor Patent  
[NASA-CASE-XLE-00785] c 33 N71-16104

Method of making self lubricating fluoride-metal composite materials Patent  
[NASA-CASE-XLE-08511-2] c 18 N71-16105

Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629

Linear magnetic brake with two windings Patent  
[NASA-CASE-XLE-05079] c 15 N71-17652

Method of lubricating rolling element bearings Patent  
[NASA-CASE-XLE-09527] c 15 N71-17688

Hot wire liquid level detector for cryogenic fluids Patent  
[NASA-CASE-XLE-00454] c 23 N71-17802

Pulsed differential comparator circuit Patent  
[NASA-CASE-XLE-03804] c 10 N71-19471

Foil seal Patent  
[NASA-CASE-XLE-05130-2] c 15 N71-19570

Generator for a space power system Patent  
[NASA-CASE-XLE-04250] c 09 N71-20446

Method of making electrical contact on silicon solar cell and resultant product Patent  
[NASA-CASE-XLE-04787] c 03 N71-20492

Small plasma probe Patent  
[NASA-CASE-XLE-02578] c 25 N71-20747

Combined electrolysis device and fuel cell and method of operation Patent  
[NASA-CASE-XLE-01645] c 03 N71-20904

Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090

Control of transverse instability in rocket combustors Patent  
[NASA-CASE-XLE-04603] c 33 N71-21507

High voltage divider system Patent  
[NASA-CASE-XLE-02008] c 09 N71-21583

Plasma device feed system Patent  
[NASA-CASE-XLE-02902] c 25 N71-21694

Burning rate control of solid propellants Patent  
[NASA-CASE-XLE-03494] c 27 N71-21819

Protective device for machine and metalworking tools Patent  
[NASA-CASE-XLE-01092] c 15 N71-22797

Cryogenic insulation system Patent  
[NASA-CASE-XLE-04222] c 23 N71-22881

Method for producing fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-03925] c 18 N71-22894

Thermal shock apparatus Patent  
[NASA-CASE-XLE-02024] c 14 N71-22964

Arc electrode of graphite with ball tip Patent  
[NASA-CASE-XLE-04788] c 09 N71-22987

Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080

Automatic recording McLeod gauge Patent  
[NASA-CASE-XLE-03280] c 14 N71-23093

Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
[NASA-CASE-XLE-04501] c 09 N71-23190

High temperature ferromagnetic cobalt-base alloy Patent  
[NASA-CASE-XLE-03629] c 17 N71-23248

Induction furnace with perforated tungsten foil shielding Patent  
[NASA-CASE-XLE-04026] c 14 N71-23267

Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292

Protection of serially connected solar cells against open circuits by the use of shunting diode Patent  
[NASA-CASE-XLE-04535] c 03 N71-23354

Superconducting alternator Patent  
[NASA-CASE-XLE-02823] c 09 N71-23443

Silicon solar cell with cover glass bonded to cell by metal pattern Patent  
[NASA-CASE-XLE-08569] c 03 N71-23449

Analytical test apparatus and method for determining oxide content of alkali metal Patent  
[NASA-CASE-XLE-01997] c 06 N71-23527

Thermionic converter with current augmented by self induced magnetic field Patent  
[NASA-CASE-XLE-01903] c 22 N71-23599

Semiconductor material and method of making same Patent  
[NASA-CASE-XLE-02798] c 26 N71-23654

Insulation system Patent  
[NASA-CASE-XLE-02647] c 18 N71-23658

Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710

Alloys for bearings Patent  
[NASA-CASE-XLE-05033] c 15 N71-23810

Extrusion die for refractory metals Patent  
[NASA-CASE-XLE-06773] c 15 N71-23817

Combustion chamber Patent  
[NASA-CASE-XLE-04857] c 28 N71-23968

Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-10337] c 15 N71-24046

Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142

Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145

Method of attaching a cover glass to a silicon solar cell Patent  
[NASA-CASE-XLE-08569-2] c 03 N71-24681

Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736

Multialarm summary alarm Patent  
[NASA-CASE-XLE-03061-1] c 10 N71-24798

Apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917-2] c 15 N71-24836

Flow angle sensor and read out system Patent  
[NASA-CASE-XLE-04503] c 14 N71-24864

Shock tube powder dispersing apparatus Patent  
[NASA-CASE-XLE-04946] c 17 N71-24911

Pneumatic oscillator Patent  
[NASA-CASE-XLE-10345-1] c 10 N71-25899

Heat activated cell with alkali anode and alkali salt electrolyte Patent  
[NASA-CASE-XLE-11358] c 03 N71-26084

Method of producing refractory composites containing tantalum carbide, hafnium carbide, and hafnium boride Patent  
[NASA-CASE-XLE-03940] c 18 N71-26153

Ion beam deflector Patent  
[NASA-CASE-XLE-10689-1] c 28 N71-26173

Rolling element bearings Patent  
[NASA-CASE-XLE-09527-2] c 15 N71-26189

Ion thruster accelerator system Patent  
[NASA-CASE-XLE-10106-1] c 28 N71-26642

Propellant feed isolator Patent  
[NASA-CASE-XLE-10210-1] c 28 N71-26781

Heat activated cell Patent  
[NASA-CASE-XLE-11359] c 03 N71-28579

Process for glass coating an ion accelerator grid Patent  
[NASA-CASE-XLE-10278-1] c 15 N71-28582

Fluid jet amplifier Patent  
[NASA-CASE-XLE-09341] c 12 N71-28741

Gas core nuclear reactor Patent  
[NASA-CASE-XLE-10250-1] c 22 N71-28759

Gas turbine combustor Patent  
[NASA-CASE-XLE-10286-1] c 28 N71-28915

Cyclic switch Patent  
[NASA-CASE-XLE-10155-1] c 09 N71-29035

Temperature reducing coating for metals subject to flame exposure Patent  
[NASA-CASE-XLE-00035] c 33 N71-29151

Liquid spray cooling method Patent  
[NASA-CASE-XLE-00027] c 33 N71-29152

Turbo-machine blade vibration damper Patent  
[NASA-CASE-XLE-00155] c 28 N71-29154

Corrosion resistant beryllium Patent  
[NASA-CASE-XLE-10327] c 17 N71-33408

Integrated thermoelectric generator/space antenna combination  
[NASA-CASE-XER-09521] c 09 N72-12136

Sensing probe  
[NASA-CASE-XLE-10281-1] c 14 N72-17327

Method of making emf cell  
[NASA-CASE-XLE-11359-2] c 03 N72-20034

Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597

Switching regulator  
[NASA-CASE-XLE-11005-1] c 09 N72-21243

Saturation current protection apparatus for saturable core transformers  
[NASA-CASE-XER-10075-2] c 09 N72-22196

Pulse coupling circuit  
[NASA-CASE-XLE-10433-1] c 09 N72-22197

Solid state remote circuit selector switch  
[NASA-CASE-XLE-10387] c 09 N72-22201

Load-insensitive electrical device  
[NASA-CASE-XER-11046] c 09 N72-22203

High speed rolling element bearing  
[NASA-CASE-XLE-10856-1] c 15 N72-22490

Production of metal powders  
[NASA-CASE-XLE-06461] c 17 N72-22530

Nickel base alloy  
[NASA-CASE-XLE-10874-1] c 17 N72-22535

Ion thruster magnetic field control  
[NASA-CASE-XLE-10835-1] c 28 N72-22771

Electrically conductive fluorocarbon polymer  
[NASA-CASE-XLE-06774-2] c 06 N72-25150

Analog Signal to Discrete Time Interval Converter (ASDTIC)  
[NASA-CASE-XER-10048] c 09 N72-25251

Controllable load insensitive power converters  
[NASA-CASE-XER-10268] c 09 N72-25252

Angular velocity and acceleration measuring apparatus  
[NASA-CASE-XER-10292] c 14 N72-25410

Electrical insulating layer process  
[NASA-CASE-XLE-10489-1] c 15 N72-25447

Method for producing dispersion strengthened alloys by converting metal to a halide, comminuting, reducing the metal halide to the metal and sintering  
[NASA-CASE-XLE-10450-1] c 15 N72-25448

Selective nickel deposition  
[NASA-CASE-XLE-10965-1] c 15 N72-25452

Method of making fiber composites  
[NASA-CASE-XLE-10424-2-2] c 18 N72-25539

Electricity measurement devices employing liquid crystalline materials  
[NASA-CASE-XER-10275] c 26 N72-25680



Ablative system			Method of making rolling element bearings			Process for making anhydrous metal halides		
[NASA-CASE-LEW-10359]	c 33	N72-25911	[NASA-CASE-LEW-11087-2]	c 37	N74-15128	[NASA-CASE-LEW-11860-1]	c 37	N76-18458
Inductance device with vacuum insulation			Gas turbine exhaust nozzle			Method of constructing dished ion thruster grids to provide hole array spacing compensation		
[NASA-CASE-LEW-10330-1]	c 09	N72-27226	[NASA-CASE-LEW-11569-1]	c 07	N74-15453	[NASA-CASE-LEW-11876-1]	c 20	N76-21276
Apparatus for sensing temperature			Demodulator for carrier transducers			Bearing material		
[NASA-CASE-XLE-05230]	c 14	N72-27410	[NASA-CASE-NUC-10107-1]	c 33	N74-17930	[NASA-CASE-LEW-11930-1]	c 24	N76-22309
Apparatus for producing metal powders			Diffusion welding in air			Fluid seal for rotating shafts		
[NASA-CASE-XLE-06461-2]	c 17	N72-28535	[NASA-CASE-LEW-11387-1]	c 37	N74-18128	[NASA-CASE-LEW-11676-1]	c 37	N76-22541
Refractory metal base alloy composites			Airflow control system for supersonic inlets			Method of making an apertured casting		
[NASA-CASE-XLE-03940-2]	c 17	N72-28536	[NASA-CASE-LEW-11188-1]	c 02	N74-20646	[NASA-CASE-LEW-11169-1]	c 37	N76-23570
Spiral groove seal			Rapidly pulsed, high intensity, incoherent light source			Process for fabricating SiC semiconductor devices		
[NASA-CASE-XLE-10326-2]	c 15	N72-29488	[NASA-CASE-XLE-2529-3]	c 33	N74-20859	[NASA-CASE-LEW-12094-1]	c 76	N76-25049
Production of high purity I-123			Electromagnetic flow rate meter			Method of producing I-123		
[NASA-CASE-LEW-10518-1]	c 24	N72-33681	[NASA-CASE-LEW-10981-1]	c 35	N74-21018	[NASA-CASE-LEW-11390-2]	c 25	N76-27383
Electrostatic collector for charged particles			Diffusion welding			Production of I-123		
[NASA-CASE-LEW-11192-1]	c 09	N73-13208	[NASA-CASE-LEW-11388-2]	c 37	N74-21055	[NASA-CASE-LEW-11390-3]	c 25	N76-29379
Method of making apparatus for sensing temperature			Journal bearings			Thrust bearing		
[NASA-CASE-XLE-05230-2]	c 14	N73-13417	[NASA-CASE-LEW-11076-1]	c 37	N74-21061	[NASA-CASE-LEW-11949-1]	c 37	N76-29588
Method of forming superalloys			Glass-to-metal seals comprising relatively high expansion metals			Ion beam thruster shield		
[NASA-CASE-LEW-10805-1]	c 15	N73-13465	[NASA-CASE-LEW-10698-1]	c 37	N74-21063	[NASA-CASE-LEW-12082-1]	c 20	N77-10148
Rocket thrust throttling system			Hollow rolling element bearings			Dual output variable pitch turbofan actuation system		
[NASA-CASE-LEW-10374-1]	c 28	N73-13773	[NASA-CASE-LEW-11087-3]	c 37	N74-21064	[NASA-CASE-LEW-12419-1]	c 07	N77-14025
Gas turbine engine fuel control			Low level signal limiter			Silicon nitride coated, plastic covered solar cell		
[NASA-CASE-LEW-11187-1]	c 28	N73-19793	[NASA-CASE-XLE-04791]	c 32	N74-22096	[NASA-CASE-LEW-11496-1]	c 44	N77-14580
Thermocouple tape			Load insensitive electrical device			Electrically rechargeable REDOX flow cell		
[NASA-CASE-LEW-11072-1]	c 14	N73-24472	[NASA-CASE-XER-11046-2]	c 33	N74-22864	[NASA-CASE-LEW-12220-1]	c 44	N77-14581
Method and apparatus for sputtering utilizing an apertured electrode and a pulsed substrate bias			Reinforced structural plastics			Reverse pitch fan with divided splitter		
[NASA-CASE-LEW-10920-1]	c 17	N73-24569	[NASA-CASE-LEW-10199-1]	c 27	N74-23125	[NASA-CASE-LEW-12760-1]	c 07	N77-17059
Magneto-plasma-dynamic arc thruster			Jet exhaust noise suppressor			Electronic analog divider		
[NASA-CASE-LEW-11180-1]	c 25	N73-25760	[NASA-CASE-LEW-11286-1]	c 07	N74-27490	[NASA-CASE-LEW-11881-1]	c 33	N77-17354
Ablative system			High current electrical lead			Leading edge protection for composite blades		
[NASA-CASE-LEW-10359-2]	c 33	N73-25952	[NASA-CASE-LEW-10950-1]	c 33	N74-27683	[NASA-CASE-LEW-12550-1]	c 24	N77-19170
Parasitic suppressing circuit			Magnetocaloric pump			Method of making reinforced composite structure		
[NASA-CASE-ERC-10403-1]	c 10	N73-26228	[NASA-CASE-LEW-11672-1]	c 37	N74-27904	[NASA-CASE-LEW-12619-1]	c 24	N77-19171
Twisted multifilament superconductor			Supersonic fan blading			Solar cell assembly		
[NASA-CASE-LEW-11726-1]	c 26	N73-26752	[NASA-CASE-LEW-11402-1]	c 07	N74-28226	[NASA-CASE-LEW-11549-1]	c 44	N77-19571
Ophthalmic method and apparatus			Production of pure metals			Anode for ion thruster		
[NASA-CASE-LEW-11669-1]	c 05	N73-27062	[NASA-CASE-LEW-10906-1]	c 25	N74-30502	[NASA-CASE-LEW-12048-1]	c 20	N77-20162
Single grid accelerator for an ion thruster			Sputtering holes with ion beamlets			Zirconium modified nickel-copper alloy		
[NASA-CASE-XLE-10453-2]	c 28	N73-27699	[NASA-CASE-LEW-11646-1]	c 20	N74-31269	[NASA-CASE-LEW-12245-1]	c 26	N77-20201
Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids			Method of electroforming a rocket chamber			Gels as battery separators for soluble electrode cells		
[NASA-CASE-LEW-11325-1]	c 06	N73-27980	[NASA-CASE-LEW-11118-1]	c 20	N74-32919	[NASA-CASE-LEW-12364-1]	c 44	N77-22606
Method and apparatus for measuring electromagnetic radiation			Journal Bearings			Oil cooling system for a gas turbine engine		
[NASA-CASE-LEW-11159-1]	c 14	N73-28488	[NASA-CASE-LEW-11076-2]	c 37	N74-32921	[NASA-CASE-LEW-12830-1]	c 07	N77-23106
Welding blades to rotors			Hall effect magnetometer			Process for preparing liquid metal electrical contact device		
[NASA-CASE-LEW-10533-1]	c 15	N73-28515	[NASA-CASE-LEW-11632-2]	c 35	N75-13213	[NASA-CASE-LEW-11978-1]	c 33	N77-26385
Low mass rolling element for bearings			Method of protecting the surface of a substrate			Blade retainer assembly		
[NASA-CASE-LEW-11087-1]	c 15	N73-30458	[NASA-CASE-LEW-11696-1]	c 37	N75-13261	[NASA-CASE-LEW-12608-1]	c 07	N77-27116
Swirl can primary combustor			Circuit for detecting initial systole and diastolic notch			Hybrid composite laminate structures		
[NASA-CASE-LEW-11326-1]	c 23	N73-30665	[NASA-CASE-LEW-11581-1]	c 54	N75-13531	[NASA-CASE-LEW-12118-1]	c 24	N77-27188
Enhanced diffusion welding			Method of making dished ion thruster grids			Bimetallic junctions		
[NASA-CASE-LEW-11388-1]	c 15	N73-32358	[NASA-CASE-LEW-11694-1]	c 20	N75-18310	[NASA-CASE-LEW-11573-1]	c 26	N77-28265
High speed hybrid bearing comprising a fluid bearing and a rolling bearing connected in series			Duplex aluminized coatings			Sustained arc ignition system		
[NASA-CASE-LEW-11152-1]	c 15	N73-32359	[NASA-CASE-LEW-11696-2]	c 26	N75-19408	[NASA-CASE-LEW-12444-1]	c 33	N77-28385
Nickel aluminate coated low alloy stainless steel			High speed, self-acting shaft seal			Hydrostatic bearing support		
[NASA-CASE-LEW-11267-1]	c 17	N73-32414	[NASA-CASE-LEW-11274-1]	c 37	N75-21631	[NASA-CASE-LEW-11158-1]	c 37	N77-28486
Cobalt-base alloy			High power laser apparatus and system			Corneal seal device		
[NASA-CASE-LEW-10436-1]	c 17	N73-32415	[NASA-CASE-XLE-2529-2]	c 36	N75-27364	[NASA-CASE-LEW-12258-1]	c 52	N77-28716
Nuclear fuel elements			Combination automatic-starting electrical plasma torch and gas shutoff valve			Solar cell shingle		
[NASA-CASE-XLE-00209]	c 22	N73-32528	[NASA-CASE-XLE-10717]	c 37	N75-29426	[NASA-CASE-LEW-12587-1]	c 44	N77-31601
Method of fabricating a twisted composite superconductor			Flow measuring apparatus			Platform for a swing root turbomachinery blade		
[NASA-CASE-LEW-11015]	c 26	N73-32571	[NASA-CASE-LEW-12078-1]	c 35	N75-30503	[NASA-CASE-LEW-12312-1]	c 07	N77-32148
Space vehicle with artificial gravity and earth-like environment			Lubricated journal bearing			Directionally solidified eutectic gamma plus beta nickel-base superalloys		
[NASA-CASE-LEW-11101-1]	c 31	N73-32750	[NASA-CASE-LEW-11076-3]	c 37	N75-30562	[NASA-CASE-LEW-12906-1]	c 26	N77-32279
Production of hollow components for rolling element bearings by diffusion welding			Protected isotope heat source			Nickel base alloy		
[NASA-CASE-LEW-11026-1]	c 15	N73-33383	[NASA-CASE-LEW-11227-1]	c 73	N75-30876	[NASA-CASE-LEW-12270-1]	c 26	N77-32280
Electron beam controller			Drilled ball bearing with a one piece anti-tipping cage assembly			Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance		
[NASA-CASE-LEW-11617-1]	c 33	N74-10195	[NASA-CASE-LEW-111925-1]	c 37	N75-31446	[NASA-CASE-LEW-12050-1]	c 35	N77-32454
Spiral groove seal			Method of making an insulation foil			Spatial filter for Q-switched lasers		
[NASA-CASE-LEW-10326-3]	c 37	N74-10474	[NASA-CASE-LEW-11484-1]	c 24	N75-33181	[NASA-CASE-LEW-12164-1]	c 38	N77-32478
Method of heat treating a formed powder product material			Ophthalmic liquefaction pump			Deformable bearing seal		
[NASA-CASE-LEW-10805-3]	c 26	N74-10521	[NASA-CASE-LEW-12051-1]	c 52	N75-33640	[NASA-CASE-LEW-12527-1]	c 37	N77-32500
Apparatus for welding blades to rotors			Controlled separation combustor			Bearing seat usable in a gas turbine engine		
[NASA-CASE-LEW-10533-2]	c 37	N74-11300	[NASA-CASE-LEW-11593-1]	c 20	N76-14190	[NASA-CASE-LEW-12477-1]	c 37	N77-32501
High powered arc electrodes			Rocket chamber and method of making			Fuel combustor		
[NASA-CASE-LEW-11162-1]	c 33	N74-12913	[NASA-CASE-LEW-11118-2]	c 20	N76-14191	[NASA-CASE-LEW-12137-1]	c 25	N78-10224
Method of forming articles of manufacture from superalloy powders			Shock position sensor for supersonic inlets			Oil cooling system for a gas turbine engine		
[NASA-CASE-LEW-10805-2]	c 37	N74-13179	[NASA-CASE-LEW-11915-1]	c 35	N76-14431	[NASA-CASE-LEW-12321-1]	c 37	N78-10467
Deposition of alloy films			Apparatus for forming dished ion thruster grids			Impact absorbing blade mounts for variable pitch blades		
[NASA-CASE-LEW-11262-1]	c 27	N74-13270	[NASA-CASE-LEW-11694-2]	c 37	N76-14461	[NASA-CASE-LEW-12313-1]	c 37	N78-10468
Supersonic-combustion rocket			Covered silicon solar cells and method of manufacture			Method of forming metal hydride films		
[NASA-CASE-LEW-11058-1]	c 20	N74-13502	[NASA-CASE-LEW-11065-2]	c 44	N76-14600	[NASA-CASE-LEW-12083-1]	c 37	N78-13436
Method of making silicon solar cell array			High temperature beryllium oxide capacitor			In-situ laser retorting of oil shale		
[NASA-CASE-LEW-11069-1]	c 44	N74-14784	[NASA-CASE-LEW-11938-1]	c 33	N76-15373	[NASA-CASE-LEW-12217-1]	c 43	N78-14452
Spiral groove seal			Thermocouple tape			Multi-cell battery protection system		
[NASA-CASE-XLE-10326-4]	c 37	N74-15125	[NASA-CASE-LEW-11072-2]	c 35	N76-15434	[NASA-CASE-LEW-12039-1]	c 44	N78-14625
			Fluid journal bearings			Tissue macerating instrument		
			[NASA-CASE-LEW-11076-4]	c 37	N76-15461	[NASA-CASE-LEW-12668-1]	c 52	N78-14773
			Deuterium pass through target			Trimerization of aromatic nitriles		
			[NASA-CASE-LEW-11866-1]	c 72	N76-15860	[NASA-CASE-LEW-12053-1]	c 27	N78-15276
			Fused silicate coatings containing discrete particles for protecting niobium alloys					
			[NASA-CASE-LEW-11179-1]	c 27	N76-16229			



Variable thrust nozzle for quiet turbofan engine and method of operating same	[NASA-CASE-LEW-12317-1]	c 07	N78-17055
Gas turbine engine with convertible accessories	[NASA-CASE-LEW-12390-1]	c 07	N78-17056
Closed loop spray cooling apparatus	[NASA-CASE-LEW-11981-1]	c 31	N78-17237
Particle parameter analyzing system	[NASA-CASE-XLE-06094]	c 33	N78-17293
Magnetic heat pumping	[NASA-CASE-LEW-12508-1]	c 34	N78-17335
Variable cycle gas turbine engines	[NASA-CASE-LEW-12916-1]	c 37	N78-17384
Integrated gas turbine engine-nacelle	[NASA-CASE-LEW-12389-2]	c 07	N78-18066
Variable mixer propulsion cycle	[NASA-CASE-LEW-12917-1]	c 07	N78-18067
Tantalum modified ferritic iron base alloys	[NASA-CASE-LEW-12095-1]	c 26	N78-18182
Directionally solidified eutectic gamma-gamma nickel-base superalloys	[NASA-CASE-LEW-12905-1]	c 26	N78-18183
Thermal barrier coating system	[NASA-CASE-LEW-12554-1]	c 34	N78-18355
Selective coating for solar panels	[NASA-CASE-LEW-12159-1]	c 44	N78-19599
Atomic hydrogen storage method and apparatus	[NASA-CASE-LEW-12081-1]	c 28	N78-24365
Automotive gas turbine fuel control	[NASA-CASE-LEW-12785-1]	c 37	N78-24545
Gas turbine engine with recirculating bleed	[NASA-CASE-LEW-12452-1]	c 07	N78-25089
Counter pumping debris excluder and separator	[NASA-CASE-LEW-11855-1]	c 07	N78-25090
Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field	[NASA-CASE-LEW-12465-1]	c 25	N78-25148
Flow compensating pressure regulator	[NASA-CASE-LEW-12718-1]	c 34	N78-25351
Solar cell collector	[NASA-CASE-LEW-12552-1]	c 44	N78-25527
Method of making encapsulated solar cell modules	[NASA-CASE-LEW-12185-1]	c 44	N78-25528
Method for producing solar energy panels by automation	[NASA-CASE-LEW-12541-1]	c 44	N78-25529
Inorganic-organic separators for alkaline batteries	[NASA-CASE-LEW-12649-1]	c 44	N78-25530
Cesium thermionic converters having improved electrodes	[NASA-CASE-LEW-12036-3]	c 44	N78-25555
Targets for producing high purity I-123	[NASA-CASE-LEW-10518-3]	c 25	N78-27226
Direct heating surface combustor	[NASA-CASE-LEW-11877-1]	c 34	N78-27357
Regulated high efficiency, lightweight capacitor-diode multiplier dc to dc converter	[NASA-CASE-LEW-12791-1]	c 33	N78-32341
Redundant disc	[NASA-CASE-LEW-12496-1]	c 07	N78-33101
Apparatus and method for reducing thermal stress in a turbine rotor	[NASA-CASE-LEW-12232-1]	c 07	N79-10057
Traveling wave tube circuit	[NASA-CASE-LEW-12013-1]	c 33	N79-10339
Cantilever mounted resilient pad gas bearing	[NASA-CASE-LEW-12569-1]	c 37	N79-10418
Fuel delivery system including heat exchanger means	[NASA-CASE-LEW-12793-1]	c 37	N79-11403
Solar cells having integral collector grids	[NASA-CASE-LEW-12819-1]	c 44	N79-11487
Application of semiconductor diffusants to solar cells by screen printing	[NASA-CASE-LEW-12775-1]	c 44	N79-11468
Solar cell collector and method for producing same	[NASA-CASE-LEW-12552-2]	c 44	N79-11472
Heat exchanger	[NASA-CASE-LEW-12252-1]	c 34	N79-13288
Heat exchanger and method of making	[NASA-CASE-LEW-12441-1]	c 34	N79-13289
Cam-operated pitch-change apparatus	[NASA-CASE-LEW-13050-1]	c 07	N79-14095
Integrated gas turbine engine-nacelle	[NASA-CASE-LEW-12389-3]	c 07	N79-14096
Variable area exhaust nozzle	[NASA-CASE-LEW-12378-1]	c 07	N79-14097
Indicated mean-effective pressure instrument	[NASA-CASE-LEW-12661-1]	c 35	N79-14345
Thermocouples of molybdenum and indium alloys for more stable vacuum-high temperature performance	[NASA-CASE-LEW-12174-2]	c 35	N79-14346
Back wall solar cell	[NASA-CASE-LEW-12236-2]	c 44	N79-14528
Sound-suppressing structure with thermal relief	[NASA-CASE-LEW-12658-1]	c 71	N79-14871
Fine particulate capture device	[NASA-CASE-LEW-11583-1]	c 35	N79-17192
Formulated plastic separators for soluble electrode cells	[NASA-CASE-LEW-12358-1]	c 44	N79-17313
Method of making bearing materials	[NASA-CASE-LEW-11930-4]	c 24	N79-17916
Composite seal for turbomachinery	[NASA-CASE-LEW-12131-1]	c 37	N79-18318
Method for fabricating solar cells having integrated collector grids	[NASA-CASE-LEW-12819-2]	c 44	N79-18444
Closed loop solar array-on thruster system with power control circuitry	[NASA-CASE-LEW-12780-1]	c 20	N79-20179
Closed loop spray cooling apparatus	[NASA-CASE-LEW-11981-2]	c 34	N79-20336
Hypervelocity gun	[NASA-CASE-XLE-03186-1]	c 09	N79-21084
Low heat leak connector for cryogenic system	[NASA-CASE-XLE-02367-1]	c 31	N79-21225
Method for the preparation of inorganic single crystal and polycrystalline electronic materials	[NASA-CASE-XLE-02545-1]	c 76	N79-21910
Method and device for the detection of phenol and related compounds	[NASA-CASE-LEW-12513-1]	c 25	N79-22235
Process for making a high toughness-high strength ion alloy	[NASA-CASE-LEW-12542-2]	c 26	N79-22271
Shaft seal assembly for high speed and high pressure applications	[NASA-CASE-LEW-11873-1]	c 37	N79-22475
Self stabilizing sonic inlet	[NASA-CASE-LEW-11890-1]	c 05	N79-24976
In situ self cross-linking of polyvinyl alcohol battery separators	[NASA-CASE-LEW-12972-1]	c 44	N79-25481
Electrochemical cell for rebalancing REDOX flow system	[NASA-CASE-LEW-13150-1]	c 44	N79-26474
Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby	[NASA-CASE-LEW-12053-2]	c 27	N79-28307
Supercharged topping rocket propellant feed system	[NASA-CASE-XLE-02062-1]	c 20	N80-14188
Self-reconfiguring solar cell system	[NASA-CASE-LEW-12586-1]	c 44	N80-14472
Intra-ocular pressure normalization technique and equipment	[NASA-CASE-LEW-12955-1]	c 52	N80-14684
Method and apparatus for rapid thrust increases in a turbofan engine	[NASA-CASE-LEW-12971-1]	c 07	N80-18039
Gas path seal	[NASA-CASE-NPO-12131-3]	c 37	N80-18400
Intra-ocular pressure normalization technique and equipment	[NASA-CASE-LEW-12723-1]	c 52	N80-18690
Coupled cavity traveling wave tube with velocity tapering	[NASA-CASE-LEW-12296-1]	c 33	N80-19425
Atomic hydrogen storage	[NASA-CASE-LEW-12081-2]	c 28	N80-20402
Catalyst surfaces for the chromous/chromic redox couple	[NASA-CASE-LEW-13148-1]	c 33	N80-20487
Modification of the electrical and optical properties of polymers	[NASA-CASE-LEW-13027-1]	c 27	N80-24437
Heat exchanger and method of making	[NASA-CASE-LEW-12441-2]	c 34	N80-24573
Low temperature cross linking polyimides	[NASA-CASE-LEW-12876-1]	c 27	N80-26447
Composite seal for turbomachinery	[NASA-CASE-LEW-12131-2]	c 37	N80-26658
Diesel engine catalytic combustor system	[NASA-CASE-LEW-12995-1]	c 37	N80-26659
Circumferential shaft seal	[NASA-CASE-LEW-12119-1]	c 37	N80-28711
Free-piston regenerative hot gas hydraulic engine	[NASA-CASE-LEW-12274-1]	c 37	N80-31790
High toughness-high strength iron alloy	[NASA-CASE-LEW-12542-3]	c 26	N80-32484
Method of cross-linking polyvinyl alcohol and other water soluble resins	[NASA-CASE-LEW-13103-1]	c 27	N80-32516
Hydrogen hollow cathode ion source	[NASA-CASE-LEW-12940-1]	c 72	N80-33186
Method of making bearing material	[NASA-CASE-LEW-11930-3]	c 24	N80-33482
Curved film cooling admission tube	[NASA-CASE-LEW-13174-1]	c 34	N81-12363
Solar cell system having alternating current output	[NASA-CASE-LEW-12806-2]	c 44	N81-12542
Atomic hydrogen storage method and apparatus	[NASA-CASE-LEW-12081-3]	c 28	N81-14103
Curved centerline air intake for a gas turbine engine	[NASA-CASE-LEW-13201-1]	c 07	N81-14999
Improved refractory coatings	[NASA-CASE-LEW-23169-2]	c 26	N81-16209
Gyrotron transmitting tube	[NASA-CASE-LEW-13429-1]	c 33	N81-16384
Method for alleviating thermal stress damage in laminates	[NASA-CASE-LEW-12493-1]	c 24	N81-17170
Curing agent for polyepoxides and epoxy resins and composites cured therewith	[NASA-CASE-LEW-13226-1]	c 27	N81-17260
Apparatus for sensor failure detection and correction in a gas turbine engine control system	[NASA-CASE-LEW-12907-2]	c 07	N81-19115
Integrated control system for a gas turbine engine	[NASA-CASE-LEW-12594-2]	c 07	N81-19116
Heat pipes to reduce engine exhaust emissions	[NASA-CASE-LEW-12590-1]	c 25	N81-19245
Composition and method for making polyimide resin-reinforced fabric	[NASA-CASE-LEW-12933-1]	c 27	N81-19296
Method of cold welding using ion beam technology	[NASA-CASE-LEW-12982-1]	c 37	N81-19455
Improved thermionic energy converters	[NASA-CASE-LEW-12443-1]	c 44	N81-19561
Laser surface fusion of plasma sprayed ceramic turbine seals	[NASA-CASE-LEW-13269-1]	c 27	N81-22190
Heat pipes containing alkali metal working fluid	[NASA-CASE-LEW-12253-1]	c 34	N81-22310
Multiple plate hydrostatic viscous damper	[NASA-CASE-LEW-12445-1]	c 37	N81-22360
In-situ cross linking of polyvinyl alcohol	[NASA-CASE-LEW-13135-2]	c 27	N81-24257
Thermal barrier coating system having improved adhesion	[NASA-CASE-LEW-13359-1]	c 27	N81-24265
Ladder supported ring bar circuit	[NASA-CASE-LEW-13570-1]	c 33	N81-24348
Self-stabilizing radial face seal	[NASA-CASE-LEW-12991-1]	c 37	N81-24442
Heat exchanger and method of making	[NASA-CASE-LEW-12441-3]	c 44	N81-24519
Toroidal cell and battery	[NASA-CASE-LEW-12918-1]	c 44	N81-24521
Corrosion resistant thermal barrier coating	[NASA-CASE-LEW-13088-1]	c 26	N81-25188
Method for alleviating thermal stress damage in laminates	[NASA-CASE-LEW-12493-2]	c 24	N81-26179
Zirconium carbide as an electrocatalyst for the chromous/chromic redox couple	[NASA-CASE-LEW-13246-1]	c 25	N81-26203
Circumferential shaft seal	[NASA-CASE-LEW-12119-2]	c 37	N81-26447
Cross-linked polyvinyl alcohol and method of making same	[NASA-CASE-LEW-13504-1]	c 27	N81-27279
Additive for zinc electrodes	[NASA-CASE-LEW-13286-1]	c 44	N81-27597
Heat transparent high intensity high efficiency solar cell	[NASA-CASE-LEW-12892-1]	c 44	N81-27598
Polyvinyl alcohol battery separator containing inert filler	[NASA-CASE-LEW-13556-1]	c 44	N81-27615
Method of forming oxide coatings	[NASA-CASE-LEW-13132-1]	c 44	N81-27616
Ion beam sputter-etched ventricular catheter for hydrocephalus shunt	[NASA-CASE-LEW-13107-1]	c 52	N81-27786
Supercritical fuel injection system	[NASA-CASE-LEW-12990-1]	c 07	N81-29129
Cross-linked polyvinyl alcohol and method of making same	[NASA-CASE-LEW-13101-2]	c 23	N81-29160
Catalyst surfaces for the chromous/chromic redox couple	[NASA-CASE-LEW-13148-2]	c 44	N81-29524
Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid	[NASA-CASE-LEW-13102-1]	c 44	N81-29531
Castable high temperature refractory materials	[NASA-CASE-LEW-13080-2]	c 27	N82-11210
High thermal power density heat transfer	[NASA-CASE-LEW-12950-1]	c 34	N82-11399
Modified face seal for positive film stiffness	[NASA-CASE-LEW-12989-1]	c 37	N82-12442
Composite seal for turbomachinery	[NASA-CASE-LEW-12131-3]	c 37	N82-19540



Tension measurement device	Patent		
[NASA-CASE-XMS-05455]	c 15	N71-22878	Amplitude modulated laser transmitter
[NASA-CASE-XMS-04269]	c 16	N71-22895	Digital cardiostomometer system
[NASA-CASE-XMS-02399]	c 05	N71-22896	Phonocardiograph transducer
[NASA-CASE-XMS-05365]	c 14	N71-22993	Multiple environment materials test chamber having a multiple port X-ray tube for irradiating a plurality of samples
[NASA-CASE-XMS-02930]	c 11	N71-23042	Soft frame adjustable eyeglasses
[NASA-CASE-XMS-06064]	c 05	N71-23096	Blood pressure measuring system for separating and separately recording dc signal and an ac signal
[NASA-CASE-XMS-06061]	c 05	N71-23317	Signal ratio system utilizing voltage controlled oscillators
[NASA-CASE-XMF-04367]	c 09	N71-23545	Winch having cable position and load indicators
[NASA-CASE-MSC-12052-1]	c 15	N71-24599	Radar antenna system for acquisition and tracking
[NASA-CASE-XMS-09610]	c 07	N71-24625	Extravehicular tunnel suit system
[NASA-CASE-MSC-12243-1]	c 05	N71-24728	Broadband modified turnstile antenna
[NASA-CASE-MSC-12209]	c 09	N71-24842	Quick release hook tape
[NASA-CASE-XMS-10660-1]	c 15	N71-25975	Plated electrodes
[NASA-CASE-XMS-04213-1]	c 09	N71-26002	Audio signal processor
[NASA-CASE-MSC-12223-1]	c 07	N71-26181	Fabric for micro-meteoroid protection
[NASA-CASE-MSC-12109]	c 18	N71-26285	Antenna array phase quadrature tracking system
[NASA-CASE-MSC-12205-1]	c 07	N71-27056	Radiometric temperature reference
[NASA-CASE-MSC-13276-1]	c 14	N71-27058	Pneumatic amplifier
[NASA-CASE-MSC-12121-1]	c 15	N71-27147	Orbital escape device
[NASA-CASE-XMS-06162]	c 31	N71-28851	Inflatable tether
[NASA-CASE-XMS-10993]	c 15	N71-28936	Ion-exchange membrane with platinum electrode assembly
[NASA-CASE-XMS-02063]	c 03	N71-29044	Color television system
[NASA-CASE-MSC-12146-1]	c 07	N72-17109	Current dependent filter inductance
[NASA-CASE-ERC-10139]	c 09	N72-17154	Low onset rate energy absorber
[NASA-CASE-MSC-12279]	c 15	N72-17450	Stand-off type ablative heat shield
[NASA-CASE-MSC-12143-1]	c 33	N72-17947	Optical range finder having nonoverlapping complete images
[NASA-CASE-MSC-12105-1]	c 14	N72-21409	Open type urine receptacle
[NASA-CASE-MSC-12324-1]	c 05	N72-22093	Family of frequency to amplitude converters
[NASA-CASE-MSC-12395]	c 09	N72-25257	Foldable construction block
[NASA-CASE-MSC-12233-1]	c 15	N72-25454	Method and apparatus for detecting surface ions on silicon diodes and transistors
[NASA-CASE-ERC-10325]	c 15	N72-25457	Scientific experiment flexible mount
[NASA-CASE-MSC-12372-1]	c 31	N72-25842	Burn rate testing apparatus
[NASA-CASE-XMS-09690]	c 33	N72-25913	System for improving signal-to-noise ratio of a communication signal
[NASA-CASE-MSC-12259-2]	c 07	N72-33146	Altitude measuring system
[NASA-CASE-ERC-10412-1]	c 09	N73-12211	A method of delivering a vehicle to earth orbit and returning the reusable portion thereof to earth
[NASA-CASE-MSC-12391]	c 30	N73-12884	Multispectral imaging system
[NASA-CASE-MSC-12404-1]	c 23	N73-13661	Foldable construction block
[NASA-CASE-MSC-12233-2]	c 32	N73-13921	Space shuttle vehicle and system
[NASA-CASE-MSC-12433]	c 31	N73-14854	Apparatus for statistical time-series analysis of electrical signals
[NASA-CASE-MSC-12428-1]	c 10	N73-25240	Life raft stabilizer
[NASA-CASE-MSC-12393-1]	c 02	N73-26000	



On-film optical recording of camera lens settings [NASA-CASE-MSC-12363-1]	c 14	N73-26431	Automatic biowaste sampling [NASA-CASE-MSC-14640-1]	c 54	N76-14804	Restraining mechanism [NASA-CASE-MSC-13054-1]	c 54	N78-17677
Powerplexer [NASA-CASE-MSC-12396-1]	c 03	N73-31988	Method for manufacturing mirrors in zero gravity environment [NASA-CASE-MSC-12611-1]	c 12	N76-15189	Helmet latching and attaching ring [NASA-CASE-XMS-04670-1]	c 54	N78-17678
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Solid state controller three axes controller [NASA-CASE-MSC-12394-1]	c 08	N74-10942	Frequency measurement by coincidence detection with standard frequency [NASA-CASE-MSC-14649-1]	c 33	N76-16331	Optical conversion method [NASA-CASE-MSC-12618-1]	c 74	N78-17865
Method for obtaining oxygen from lunar or similar soil [NASA-CASE-MSC-12408-1]	c 46	N74-13011	Space vehicle system [NASA-CASE-MSC-12561-1]	c 18	N76-17185	Emergency space-suit helmet [NASA-CASE-MSC-10954-1]	c 54	N78-18761
Adaptive voting computer system [NASA-CASE-MSC-13932-1]	c 62	N74-14920	Method of fluxless brazing and diffusion bonding of aluminum containing components [NASA-CASE-MSC-14435-1]	c 37	N76-18455	Method of producing complex aluminum alloy parts of high temper, and products thereof [NASA-CASE-MSC-19693-1]	c 26	N78-24333
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Pulse code modulated signal synchronizer [NASA-CASE-MSC-12462-1]	c 32	N74-20809	Three-component ceramic coating for silica insulation [NASA-CASE-MSC-14270-2]	c 27	N76-23426	Variable contour securing system [NASA-CASE-MSC-16270-1]	c 37	N78-27423
Pulse code modulated signal synchronizer [NASA-CASE-MSC-12494-1]	c 32	N74-20810	Binary concatenated coding system [NASA-CASE-MSC-14082-1]	c 60	N76-23850	Urine collection device [NASA-CASE-MSC-16433-1]	c 52	N78-27750
Apparatus and method for processing Korotkov sounds [NASA-CASE-MSC-13999-1]	c 52	N74-26626	Non-flammable elastomeric fiber from a fluorinated elastomer and containing an halogenated flame retardant [NASA-CASE-MSC-14331-1]	c 27	N76-24405	Multi-purpose wind tunnel reaction control model block [NASA-CASE-MSC-19706-1]	c 09	N78-31129
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Technique for recovery of voice data from heat damaged magnetic tape [NASA-CASE-MSC-14219-1]	c 32	N74-27612	Sun angle calculator [NASA-CASE-MSC-12617-1]	c 35	N76-29552	Condition sensor system and method [NASA-CASE-MSC-14805-1]	c 54	N78-32720
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Specific wavelength colorimeter [NASA-CASE-MSC-14081-1]	c 35	N74-27860	Flanged major modular assembly jig [NASA-CASE-MSC-19372-1]	c 39	N76-31562	Phased array antenna control [NASA-CASE-MSC-14939-1]	c 32	N79-11264
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Method and apparatus for decoding compatible convolutional codes [NASA-CASE-MSC-14070-1]	c 32	N74-32598	Differential pulse code modulation [NASA-CASE-MSC-12506-1]	c 32	N77-12239	Lightweight electrically-powered flexible thermal laminate [NASA-CASE-MSC-12662-1]	c 33	N79-12331
Pulse stretcher for narrow pulses [NASA-CASE-MSC-14130-1]	c 33	N74-32711	Method and system for in vivo measurement of bone tissue using a two level energy source [NASA-CASE-MSC-14276-1]	c 52	N77-14737	Simultaneous treatment of SO2 containing stack gases and waste water [NASA-CASE-MSC-16258-1]	c 45	N79-12584
Method and device for detection of surface discontinuities or defects [NASA-CASE-MSC-14187-1]	c 35	N74-32879	Analysis of volatile organic compounds [NASA-CASE-MSC-14428-1]	c 23	N77-17161	Length mode piezoelectric ultrasonic transducer for inspection of solid objects [NASA-CASE-MSC-19672-1]	c 38	N79-14398
Anti-fog composition [NASA-CASE-MSC-13530-2]	c 23	N75-14834	System for producing chroma signals [NASA-CASE-MSC-14683-1]	c 74	N77-18893	Interactive color display for multispectral imagery using correlation clustering [NASA-CASE-MSC-16253-1]	c 32	N79-20297
Four phase logic systems [NASA-CASE-MSC-14240-1]	c 33	N75-14957	Fluid mass sensor for a zero gravity environment [NASA-CASE-MSC-14653-1]	c 35	N77-19385	Sequencing device utilizing planetary gear set [NASA-CASE-MSC-19514-1]	c 37	N79-20377
Peak holding circuit for extremely narrow pulses [NASA-CASE-MSC-14129-1]	c 33	N75-18479	Mechanical sequencer [NASA-CASE-MSC-19536-1]	c 37	N77-22482	Water separator [NASA-CASE-XMS-01295-1]	c 37	N79-21345
Random pulse generator [NASA-CASE-MSC-14131-1]	c 33	N75-19515	Unbalanced quadrature demodulator [NASA-CASE-MSC-14840-1]	c 32	N77-24331	Metabolic rate meter and method [NASA-CASE-MSC-12239-1]	c 52	N79-21750
Grain refinement control in TiG arc welding [NASA-CASE-MSC-19095-1]	c 37	N75-19683	Open loop digital frequency multiplier [NASA-CASE-MSC-12709-1]	c 33	N77-24375	Diced tile thermal protection for spacecraft [NASA-CASE-MSC-16366-1]	c 24	N79-23142
Condensate removal device for heat exchanger [NASA-CASE-MSC-14143-1]	c 77	N75-20139	Platinum resistance thermometer circuit [NASA-CASE-MSC-12327-1]	c 35	N77-27368	Fluid sample collection and distribution system [NASA-CASE-MSC-16841-1]	c 34	N79-24285
Television noise reduction device [NASA-CASE-MSC-12607-1]	c 32	N75-21485	Surface finishing [NASA-CASE-MSC-12631-1]	c 24	N77-28225	Thermal insulation protection means [NASA-CASE-MSC-12737-1]	c 24	N79-25142
Digital transmitter for data bus communications system [NASA-CASE-MSC-14558-1]	c 32	N75-21486	Pressure modulating valve [NASA-CASE-MSC-14905-1]	c 37	N77-28487	System for automatically switching transformer coupled lines [NASA-CASE-MSC-16697-1]	c 33	N79-28415
Insulated electrocardiographic electrodes [NASA-CASE-MSC-14339-1]	c 05	N75-24716	Snap-in compressible biomedical electrode [NASA-CASE-MSC-14623-1]	c 52	N77-28717	Fused switch [NASA-CASE-XMS-01244-1]	c 33	N79-33393
Variable ratio mixed-mode bilateral master-slave control system for shuttle remote manipulator system [NASA-CASE-MSC-14245-1]	c 18	N75-27041	Load regulating latch [NASA-CASE-MSC-19535-1]	c 37	N77-32499	Chassis unit insert tightening-extract device [NASA-CASE-XMS-01077-1]	c 37	N79-33467
Multiple circuit protector device [NASA-CASE-XMS-02744-1]	c 33	N75-27249	Regenerable device for scrubbing breathable air of CO2 and moisture without special heat exchanger equipment [NASA-CASE-MSC-14771-1]	c 54	N77-32722	Compound oxidized styrylphosphine [NASA-CASE-MSC-14903-2]	c 27	N80-10358
Apparatus for welding sheet material [NASA-CASE-XMS-01330-1]	c 37	N75-27376	Process of forming catalytic surfaces for wet oxidation reactions [NASA-CASE-MSC-14831-1]	c 25	N78-10225	Portable breathing system [NASA-CASE-MSC-16182-1]	c 54	N80-10799
Multiparameter vision testing apparatus [NASA-CASE-MSC-13601-2]	c 54	N75-27759	Hearing aid malfunction detection system [NASA-CASE-MSC-14916-1]	c 33	N78-10375	Method and apparatus for eliminating luminol interference material [NASA-CASE-MSC-16260-1]	c 51	N80-16714
Thrust measurement [NASA-CASE-XMS-05731-1]	c 35	N75-29382	Gas compression apparatus [NASA-CASE-MSC-14757-1]	c 35	N78-10428	Pressure limiting propellant actuating system [NASA-CASE-MSC-18179-1]	c 20	N80-18097
Fault tolerant clock apparatus utilizing a controlled minority of clock elements [NASA-CASE-MSC-12531-1]	c 35	N75-30504	Low gravity phase separator [NASA-CASE-MSC-14773-1]	c 35	N78-12390	Method of forming dynamic membrane on stainless steel support [NASA-CASE-MSC-18172-1]	c 26	N80-19237
Filter regeneration systems [NASA-CASE-MSC-14273-1]	c 34	N75-33342	Iodine generator for reclaimed water purification [NASA-CASE-MSC-14632-1]	c 54	N78-14784	Floating nut retention system [NASA-CASE-MSC-16938-1]	c 37	N80-23653
Spacecraft docking and alignment system [NASA-CASE-MSC-12559-1]	c 18	N76-14186	Flame retardant spandex type polyurethanes [NASA-CASE-MSC-14331-2]	c 27	N78-17213	Heat resistant polymers of oxidized styrylphosphine [NASA-CASE-MSC-14903-3]	c 27	N80-24438
Reconstituted asbestos matrix [NASA-CASE-MSC-12568-1]	c 24	N76-14204	Temperature compensated current source [NASA-CASE-MSC-11235-1]	c 33	N78-17294	Vitro-violet process for producing flame resistant polyamides and products produced thereby [NASA-CASE-MSC-16074-1]	c 27	N80-26446
Strain arrestor plate for fused silica tile [NASA-CASE-MSC-14182-1]	c 27	N76-14264	Microbalance [NASA-CASE-MSC-11242-1]	c 35	N78-17358			
Medical subject monitoring systems [NASA-CASE-MSC-14180-1]	c 52	N76-14757	Adjustable securing base [NASA-CASE-MSC-19666-1]	c 37	N78-17383			



Method and automated apparatus for detecting coliform organisms			High temperature silicon carbide impregnated insulating fabrics		Electric arc welding Patent		
[NASA-CASE-MSC-16777-1]	c 51	N80-27067	[NASA-CASE-MSC-18832-1]	c 24	[NASA-CASE-XMF-00392]	c 15	N70-34814
Multiple band circularly polarized microstrip antenna			Thermal protection system		Assembly for recovering a capsule Patent		
[NASA-CASE-MSC-18334-1]	c 32	N80-32604	[NASA-CASE-MSC-18796-1]	c 24	[NASA-CASE-XMF-00641]	c 31	N70-36410
Multispectral scanner optical system			High temperature emittance coatings and coating compositions		Printed cable connector Patent		
[NASA-CASE-MSC-18255-1]	c 74	N80-33210	[NASA-CASE-MSC-18851-1]	c 27	[NASA-CASE-XMF-00369]	c 09	N70-36494
Surface finishing			Moisture content and gas sampling device		Landing pad assembly for aerospace vehicles Patent		
[NASA-CASE-MSC-12631-3]	c 27	N81-14077	[NASA-CASE-MSC-18866-1]	c 35	[NASA-CASE-XMF-02853]	c 31	N70-36654
Coaxial phased array antenna			Open ended tubing cutters		Electric arc driven wind tunnel Patent		
[NASA-CASE-MSC-16800-1]	c 32	N81-14187	[NASA-CASE-MSC-18538-1]	c 37	[NASA-CASE-XMF-00411]	c 11	N70-36913
Installing fiber insulation			Reusable captive blind fastener		Gravity device Patent		
[NASA-CASE-MSC-16973-1]	c 37	N81-14317	[NASA-CASE-MSC-18742-1]	c 37	[NASA-CASE-XMF-00424]	c 11	N70-38196
Pseudonoise code tracking loop			Absorbent product and articles made therefrom		Injector for bipropellant rocket engines Patent		
[NASA-CASE-MSC-18035-1]	c 32	N81-15179	[NASA-CASE-MSC-18223-2]	c 52	[NASA-CASE-XMF-00148]	c 28	N70-38710
Thermal barrier pressure seal			Television camera video level control system		Electronic motor control system Patent		
[NASA-CASE-MSC-18134-1]	c 37	N81-15363	[NASA-CASE-MSC-18578-1]	c 74	[NASA-CASE-XMF-01129]	c 09	N70-38712
Kinesimetric method and apparatus			Spiral slotted phased antenna array		Slosh suppressing device and method Patent		
[NASA-CASE-MSC-18929-1]	c 54	N81-15699	[NASA-CASE-MSC-18532-1]	c 32	[NASA-CASE-XMF-00658]	c 12	N70-38997
Receiving and tracking phase modulated signals			Apparatus for releasably connecting first and second objects in predetermined space relationship		Air bearing Patent		
[NASA-CASE-MSC-16170-2]	c 32	N81-16338	[NASA-CASE-MSC-18969-1]	c 15	[NASA-CASE-XMF-00339]	c 15	N70-39896
Digital numerically controlled oscillator			Thermal garment		Instrument support with precise lateral adjustment Patent		
[NASA-CASE-MSC-16747-1]	c 33	N81-17349	[NASA-CASE-XMS-03694-1]	c 54	[NASA-CASE-XMF-00480]	c 14	N70-39898
Self-calibrating threshold detector			Reconfiguring redundancy management		Segmented back-up bar Patent		
[NASA-CASE-MSC-16370-1]	c 35	N81-19427	[NASA-CASE-MSC-18498-1]	c 60	[NASA-CASE-XMF-00640]	c 15	N70-39924
Satellite retrieval system			Absorbent product to absorb fluids		Collapsible loop antenna for space vehicle Patent		
[NASA-CASE-MFS-25403-1]	c 18	N81-24164	[NASA-CASE-MSC-18223-1]	c 24	[NASA-CASE-XMF-00437]	c 07	N70-40202
Cell and method for electrolysis of water and anode			Attachment system for silica tiles		Flexible back-up bar Patent		
[NASA-CASE-MSC-16394-1]	c 28	N81-24280	[NASA-CASE-MSC-18741-1]	c 27	[NASA-CASE-XMF-00722]	c 15	N70-40204
A gas-to-hydraulic power converter			Optical crystal temperature gauge with fiber optic connections		Electro-optical alignment control system Patent		
[NASA-CASE-MSC-18794-1]	c 37	N81-24445	[NASA-CASE-MSC-18627-1]	c 74	[NASA-CASE-XMF-00908]	c 14	N70-40238
Apparatus for accurately preloading auger attachment means for frangible protective material			Random digital encryption secure communication system		Missile launch release system Patent		
[NASA-CASE-MSC-18791-1]	c 37	N81-24446	[NASA-CASE-MSC-16462-1]	c 32	[NASA-CASE-XMF-03198]	c 30	N70-40353
Compression test fixture			Connection system		Double-acting shock absorber Patent		
[NASA-CASE-MSC-18723-1]	c 39	N81-24470	[NASA-CASE-MSC-20319-1]	c 37	[NASA-CASE-XMF-01045]	c 15	N70-40354
Urine collection device			CAM controlled retractable door latch		Portable alignment tool Patent		
[NASA-CASE-MSC-16433-1]	c 52	N81-24711	[NASA-CASE-MSC-20304-1]	c 37	[NASA-CASE-XMF-01452]	c 15	N70-41371
Apparatus for determining changes in limb volume			Reactant pressure differential control for fuel cell gases		Device for suppressing sound and heat produced by high-velocity exhaust jets Patent		
[NASA-CASE-MSC-18759-1]	c 52	N81-24716	[NASA-CASE-MSC-20127-1]	c 44	[NASA-CASE-XMF-01813]	c 28	N70-41582
Biomedical flow sensor			Dual physiological rate measurement instrument		Unfired-ceramic flame-resistant insulation and method of making the same Patent		
[NASA-CASE-MSC-18761-1]	c 52	N81-24717	[NASA-CASE-MSC-20078-1]	c 52	[NASA-CASE-XMF-01030]	c 18	N70-41583
Apparatus for fiber optic liquid level sensing			Heat resistant protective hand covering		Pulse counting circuit which simultaneously indicates the occurrence of the nth pulse Patent		
[NASA-CASE-MSC-18674-1]	c 74	N81-24907	[NASA-CASE-MSC-20261-1]	c 54	[NASA-CASE-XMF-00906]	c 09	N70-41655
Method for applying photographic resists to otherwise incompatible substrates			Heat resistant protective hand covering		Support apparatus for dynamic testing Patent		
[NASA-CASE-MSC-18107-1]	c 27	N81-25209	[NASA-CASE-MSC-20261-2]	c 54	[NASA-CASE-XMF-01772]	c 11	N70-41677
Structural members, method and apparatus			National Aeronautics and Space Administration.		Locking device with rolling detents Patent		
[NASA-CASE-MSC-16217-1]	c 31	N81-27323	Manned Spacecraft Center, Cape Canaveral, Fla.		[NASA-CASE-XMF-01371]	c 15	N70-41829
Shielded conductor cable system			Electrode for biological recording		Tank construction for space vehicles Patent		
[NASA-CASE-MSC-12745-1]	c 33	N81-27397	[NASA-CASE-XMS-02872]	c 05	[NASA-CASE-XMF-01899]	c 31	N70-41948
Urine collection apparatus			Plural recorder system		Positive displacement flowmeter Patent		
[NASA-CASE-MSC-18381-1]	c 52	N81-28740	[NASA-CASE-XMS-06949]	c 09	[NASA-CASE-XMF-02822]	c 14	N70-41994
Densification of porous refractory substrates			National Aeronautics and Space Administration.		Hydraulic support for dynamic testing Patent		
[NASA-CASE-MSC-18737-1]	c 25	N81-29180	Marshall Space Flight Center, Huntsville, Ala.		[NASA-CASE-XMF-03248]	c 11	N71-10604
Method of repairing surface damage to porous refractory substrates			Electrical feed-through connection for printed circuit boards and printed cable		Fiber optic vibration transducer and analyzer Patent		
[NASA-CASE-MSC-18736-1]	c 27	N81-29231	[NASA-CASE-XMF-01483]	c 14	[NASA-CASE-XMF-02433]	c 14	N71-10616
Doppler radar having phase modulation of both transmitted and reflected return signals			Method for detecting hydrogen gas		Method and means for damping nutation in a satellite Patent		
[NASA-CASE-MSC-18675-1]	c 32	N81-29312	[NASA-CASE-XMF-03873]	c 06	[NASA-CASE-XMF-00442]	c 31	N71-10747
Automatic compression adjusting mechanism for internal combustion engines			Electrical connector Patent Application		Heat pipe thermionic diode power system Patent		
[NASA-CASE-MSC-18807-1]	c 37	N81-29442	[NASA-CASE-MFS-14741]	c 09	[NASA-CASE-XMF-05843]	c 03	N71-11055
Reciprocating engines			Angular measurement system Patent		Synthesis of siloxane-containing epoxy polymers Patent		
[NASA-CASE-MSC-16239-1]	c 37	N81-32510	[NASA-CASE-XMF-00447]	c 14	[NASA-CASE-MFS-13994-1]	c 06	N71-11240
Cavity-backed, micro-strip dipole antenna array			Insulating structure Patent		Bi-carrier demodulator with modulation Patent		
[NASA-CASE-MSC-18606-1]	c 32	N82-11336	[NASA-CASE-XMF-00341]	c 15	[NASA-CASE-XMF-01160]	c 07	N71-11298
Low temperature latching solenoid			Space vehicle electrical system Patent		Harness assembly Patent		
[NASA-CASE-MSC-18106-1]	c 33	N82-11357	[NASA-CASE-XMF-00517]	c 03	[NASA-CASE-MFS-14671]	c 05	N71-12341
Logic-controlled occlusive cuff system			Pivotal shock absorbing pad assembly Patent		Magnetic matrix memory system Patent		
[NASA-CASE-MSC-14836-1]	c 52	N82-11770	[NASA-CASE-XMF-03856]	c 31	[NASA-CASE-XMF-05835]	c 08	N71-12504
Electrophotolysis oxidation system for measurement of organic concentration in water			Gimballed, partially submerged rocket nozzle Patent		Pulse amplitude and width detector Patent		
[NASA-CASE-MSC-16497-1]	c 25	N82-12166	[NASA-CASE-XMF-01544]	c 28	[NASA-CASE-XMF-06519]	c 09	N71-12519
Heat sealable, flame and abrasion resistant coated fabric			Recoverable rocket vehicle Patent		Microwave power receiving antenna Patent		
[NASA-CASE-MSC-18382-1]	c 27	N82-16238	[NASA-CASE-XMF-00389]	c 31	[NASA-CASE-MFS-20333]	c 09	N71-13486
Surface conforming thermal/pressure seal			Electrical discharge apparatus for forming Patent		Hybrid holographic system using reflected and transmitted object beams simultaneously Patent		
[NASA-CASE-MSC-18422-1]	c 37	N82-16408	[NASA-CASE-XMF-00375]	c 15	[NASA-CASE-MFS-20074]	c 16	N71-15565
Deaerator/mixer for liquids			Optical inspection apparatus Patent		Reactance control system Patent		
[NASA-CASE-MSC-18936-1]	c 25	N82-22329	[NASA-CASE-XMF-00462]	c 14	[NASA-CASE-XMF-01598]	c 21	N71-15583
Heat sealable, flame and abrasion resistant coated fabric			Relay binary circuit Patent		Apparatus for welding torch angle and seam tracking control Patent		
[NASA-CASE-MSC-18382-2]	c 27	N82-24344	[NASA-CASE-XMF-00421]	c 09	[NASA-CASE-XMF-03287]	c 15	N71-15607
Direct current ballast circuit for metal halide lamp			Attitude and propellant flow control system and method Patent		Multway vortex valve system Patent		
[NASA-CASE-MSC-18407-1]	c 33	N82-24427	[NASA-CASE-XMF-00185]	c 21	[NASA-CASE-XMF-04709]	c 15	N71-15609
Precision heat forming of tetrafluoroethylene tubing			Electrical connector for flat cables Patent		Injector assembly for liquid fueled rocket engines Patent		
[NASA-CASE-MSC-18430-1]	c 37	N82-24491	[NASA-CASE-XMF-00324]	c 09	[NASA-CASE-XMF-00968]	c 28	N71-15660
High temperature penetrator assembly with bayonet plug and ramp-activated lock			Externally pressurized fluid bearing Patent		Space capsule ejection assembly Patent		
[NASA-CASE-MSC-18526-1]	c 37	N82-24494	[NASA-CASE-XMF-00515]	c 15	[NASA-CASE-XMF-03169]	c 31	N71-15675
A method and technique for installing light-weight fragile, high-temperature fiber insulation			Force measuring instrument Patent		Air cushion lift pad Patent		
[NASA-CASE-MSC-18934-3]	c 24	N82-26387	[NASA-CASE-XMF-00456]	c 14	[NASA-CASE-MFS-14685]	c 31	N71-15689
			Seismic displacement transducer Patent		Method of making a molded connector Patent		
			[NASA-CASE-XMF-00479]	c 14	[NASA-CASE-XMF-03498]	c 15	N71-15986



Regenerative braking system Patent [NASA-CASE-XMF-01096]	c 10	N71-16030	Electron beam instrument for measuring electric fields Patent [NASA-CASE-XMF-10289]	c 14	N71-23699	Apparatus for obtaining isotropic irradiation of a specimen [NASA-CASE-MFS-20095]	c 24	N72-11595
Condition and condition duration indicator Patent [NASA-CASE-XMF-01097]	c 10	N71-16058	Anemometer with braking mechanism Patent [NASA-CASE-XMF-05224]	c 14	N71-23726	Wind tunnel test section [NASA-CASE-MFS-20509]	c 11	N72-17183
Method and apparatus for securing to a spacecraft Patent [NASA-CASE-MFS-11133]	c 31	N71-16222	Apparatus for testing a pressure responsive instrument Patent [NASA-CASE-XMF-04134]	c 14	N71-23755	Multiple image storing system for high speed projectile holography [NASA-CASE-MFS-20596]	c 14	N72-17324
Method and apparatus of simulating zero gravity conditions Patent [NASA-CASE-MFS-12750]	c 27	N71-16223	Electric welding torch Patent [NASA-CASE-XMF-02330]	c 15	N71-23798	Method of manufacturing semiconductor devices using refractory dielectrics [NASA-CASE-XER-08476-1]	c 26	N72-17820
Passive optical wind and turbulence detection system Patent [NASA-CASE-XMF-14032]	c 20	N71-16340	Swivel support for gas bearings Patent [NASA-CASE-XMF-07808]	c 15	N71-23812	Underwater space suit pressure control regulator [NASA-CASE-MFS-20332]	c 05	N72-20097
Serpentuator Patent [NASA-CASE-XMF-05344]	c 31	N71-16345	Welding skate with computerized control Patent [NASA-CASE-XMF-07069]	c 15	N71-23815	Apparatus for making diamonds [NASA-CASE-MFS-20698]	c 15	N72-20446
Gravimeter Patent [NASA-CASE-XMF-05844]	c 14	N71-17587	Docking structure for spacecraft Patent [NASA-CASE-XMF-05941]	c 31	N71-23912	An airlock [NASA-CASE-MFS-20922]	c 31	N72-20840
High pressure gas filter system Patent [NASA-CASE-MFS-12806]	c 14	N71-17588	High pressure helium purifier Patent [NASA-CASE-XMF-06888]	c 15	N71-24044	Photoetching of metal-oxide layers [NASA-CASE-ERC-10108]	c 06	N72-21094
Burst diaphragm flow initiator Patent [NASA-CASE-MFS-12915]	c 11	N71-17600	Horizontal cryostat for fatigue testing Patent [NASA-CASE-XMF-10968]	c 14	N71-24234	Liquid aerosol dispenser [NASA-CASE-MFS-20829]	c 12	N72-21310
Vacuum deposition apparatus Patent [NASA-CASE-XMF-01667]	c 15	N71-17647	Method for leakage testing of tanks Patent [NASA-CASE-XMF-02392]	c 32	N71-24285	Optical probing of supersonic flows with statistical correlation [NASA-CASE-MFS-20642]	c 14	N72-21407
Quick disconnect latch and handle combination Patent [NASA-CASE-MFS-11132]	c 15	N71-17649	Internal flare angle gauge Patent [NASA-CASE-XMF-04415]	c 14	N71-24693	Mechanically actuated triggered hand [NASA-CASE-MFS-20413]	c 15	N72-21463
Method and apparatus for precision sizing and joining of large diameter tubes Patent [NASA-CASE-XMF-05114]	c 15	N71-17650	Pulse rise time and amplitude detector Patent [NASA-CASE-XMF-08804]	c 09	N71-24717	Hermetically sealed elbow actuator [NASA-CASE-MFS-14710]	c 09	N72-22195
Low temperature flexure fatigue cryostat Patent [NASA-CASE-XMF-02964]	c 14	N71-17659	System for maintaining a motor at a predetermined speed utilizing digital feedback means Patent [NASA-CASE-XMF-06892]	c 09	N71-24805	Shielded flat cable [NASA-CASE-MFS-13687-2]	c 09	N72-22198
Precision stepping drive Patent [NASA-CASE-MFS-14772]	c 15	N71-17692	Power system with heat pipe liquid coolant lines Patent [NASA-CASE-MFS-14114-2]	c 09	N71-24807	Shock wave convergence apparatus [NASA-CASE-MFS-20890]	c 14	N72-22439
Multi-mission module Patent [NASA-CASE-XMF-01543]	c 31	N71-17730	Magnetomotive metal working device Patent [NASA-CASE-XMF-03793]	c 15	N71-24833	Bonding of reinforced Teflon to metals [NASA-CASE-MFS-20482]	c 15	N72-22492
Ratchet mechanism Patent [NASA-CASE-MFS-12805]	c 15	N71-17805	Apparatus for determining the deflection of an electron beam impinging on a target Patent [NASA-CASE-XMF-06617]	c 09	N71-24843	Inorganic thermal control coatings [NASA-CASE-MFS-20011]	c 18	N72-22566
Method of making impurity-type semiconductor electrical contacts Patent [NASA-CASE-XMF-01016]	c 26	N71-17818	Transistor servo system including a unique differential amplifier circuit Patent [NASA-CASE-XMF-05195]	c 10	N71-24861	High temperature furnace for melting materials in space [NASA-CASE-MFS-20710]	c 11	N72-23215
Apparatus for the determination of the existence or non-existence of a bonding between two members Patent [NASA-CASE-MFS-13686]	c 15	N71-18132	RC rate generator for slow speed measurement Patent [NASA-CASE-XMF-02966]	c 10	N71-24863	Siloxane containing epoxide compounds [NASA-CASE-MFS-13994-2]	c 06	N72-25148
Static inverters which sum a plurality of waves Patent [NASA-CASE-XMF-00663]	c 08	N71-18752	Method and apparatus for precision sizing and joining of large diameter tubes Patent [NASA-CASE-XMF-05114-3]	c 15	N71-24865	Siphenyleneisloxane polymers having in-chain perfluoroalkyl groups [NASA-CASE-MFS-20979]	c 06	N72-25151
Space environmental work simulator Patent [NASA-CASE-XMF-07488]	c 11	N71-18773	Duct coupling for single-handed operation Patent [NASA-CASE-MFS-20395]	c 15	N71-24903	Emergency lunar communications system [NASA-CASE-MFS-21042]	c 07	N72-25171
Space manufacturing machine Patent [NASA-CASE-MFS-20410]	c 15	N71-19214	Brushless direct current tachometer Patent [NASA-CASE-MFS-20385]	c 09	N71-24904	Lead attachment to high temperature devices [NASA-CASE-ERC-10224]	c 09	N72-25261
Extensometer Patent [NASA-CASE-XMF-04680]	c 15	N71-19489	Self-lubricating gears and other mechanical parts Patent [NASA-CASE-MFS-14971]	c 15	N71-24984	Device for measuring bearing preload [NASA-CASE-MFS-20434]	c 11	N72-25288
Mechanical simulator of low gravity conditions Patent [NASA-CASE-MFS-10555]	c 11	N71-19494	Pulse width inverter Patent [NASA-CASE-MFS-10068]	c 10	N71-25139	Altitude simulation chamber for rocket engine testing [NASA-CASE-MFS-20620]	c 11	N72-27262
Weld control system using thermocouple wire Patent [NASA-CASE-MFS-06074]	c 15	N71-20393	Isothermal cover with thermal reservoirs Patent [NASA-CASE-MFS-20355]	c 33	N71-25353	Fixture for supporting articles during vibration tests [NASA-CASE-MFS-20523]	c 14	N72-27412
Evaporant source for vapor deposition Patent [NASA-CASE-XMF-06065]	c 15	N71-20395	Storage container for electronic devices Patent [NASA-CASE-MFS-20075]	c 09	N71-26133	Electrical connector [NASA-CASE-MFS-20757]	c 09	N72-28225
Satellite despin device Patent [NASA-CASE-XMF-08523]	c 31	N71-20396	Method and apparatus for precision sizing and joining of large diameter tubes Patent [NASA-CASE-XMF-05114-2]	c 15	N71-26148	Remote control manipulator for zero gravity environment [NASA-CASE-MFS-14405]	c 15	N72-28495
Method of coating circuit paths on printed circuit boards with solder Patent [NASA-CASE-XMF-01599]	c 09	N71-20705	Filter system for control of outgas contamination in vacuum Patent [NASA-CASE-MFS-14711]	c 15	N71-26185	Thermal compensating structural member [NASA-CASE-MFS-20433]	c 15	N72-28496
Elastomeric silazane polymers and process for preparing the same Patent [NASA-CASE-XMF-04133]	c 06	N71-20717	Image magnification adapter for cameras Patent [NASA-CASE-XMF-03844-1]	c 14	N71-26474	Semiconductor transducer device [NASA-CASE-ERC-10087-2]	c 14	N72-31446
Method of producing alternating ether siloxane copolymers Patent [NASA-CASE-XMF-02584]	c 06	N71-20905	Thickness measuring and injection device Patent [NASA-CASE-MFS-20261]	c 14	N71-27005	Coaxial high density, hypervelocity plasma generator and accelerator with ionizable metal disc [NASA-CASE-MFS-20589]	c 25	N72-32688
Honeycomb panel and method of making same Patent [NASA-CASE-XMF-01402]	c 18	N71-21651	Personal propulsion unit Patent [NASA-CASE-MFS-20130]	c 28	N71-27585	Process for the preparation of brushite crystals [NASA-CASE-ERC-10338]	c 04	N72-33072
Portable milling tool Patent [NASA-CASE-XMF-03511]	c 15	N71-22799	Power system with heat pipe liquid coolant lines Patent [NASA-CASE-MFS-14114]	c 33	N71-27862	Adjustable force probe [NASA-CASE-MFS-20760]	c 14	N72-33377
Energy absorbing device Patent [NASA-CASE-XMF-10040]	c 15	N71-22877	Method of making shielded flat cable Patent [NASA-CASE-MFS-13687]	c 09	N71-28691	Polyimide resin-fiberglass cloth laminates for printed circuit boards [NASA-CASE-MFS-20408]	c 18	N73-12604
Continuous detonation reaction engine Patent [NASA-CASE-XMF-06926]	c 28	N71-22983	A dc motor speed control system Patent [NASA-CASE-MFS-14610]	c 09	N71-28886	Differential pressure control [NASA-CASE-MFS-14216]	c 14	N73-13418
Adaptive tracking notch filter system Patent [NASA-CASE-XMF-01892]	c 10	N71-22986	Cryogenic thermal insulation Patent [NASA-CASE-XMF-05046]	c 33	N71-28892	Redundant hydraulic control system for actuators [NASA-CASE-MFS-20944]	c 15	N73-13466
Meteorological balloon Patent [NASA-CASE-XMF-04163]	c 02	N71-23007	Method of coating through-holes Patent [NASA-CASE-XMF-05999]	c 15	N71-29032	Device and method for determining X ray reflection efficiency of optical surfaces [NASA-CASE-MFS-20243]	c 23	N73-13662
Continuous turning slip ring assembly Patent [NASA-CASE-XMF-01049]	c 15	N71-23049	Response analyzers for sensors Patent [NASA-CASE-MFS-11204]	c 14	N71-29134	Process for making diamonds [NASA-CASE-MFS-20698-2]	c 15	N73-19457
Automatic welding speed controller Patent [NASA-CASE-XMF-01730]	c 15	N71-23050	Current regulating voltage divider [NASA-CASE-MFS-20935]	c 09	N71-34212	Test stand system for vacuum chambers [NASA-CASE-MFS-21362]	c 11	N73-20267
Positive dc to positive dc converter Patent [NASA-CASE-XMF-14301]	c 09	N71-23188	Nuclear mass flowmeter [NASA-CASE-MFS-20485]	c 14	N72-11365	Material fatigue testing system [NASA-CASE-MFS-20673]	c 14	N73-20476
Zero gravity apparatus Patent [NASA-CASE-XMF-06515]	c 14	N71-23227	Fine adjustment mount [NASA-CASE-MFS-20249]	c 15	N72-11386	Ratemeter [NASA-CASE-MFS-20418]	c 14	N73-24473
Positive dc to negative dc converter Patent [NASA-CASE-XMF-08217]	c 03	N71-23239	Method of making foamed materials in zero gravity [NASA-CASE-XMF-09902]	c 15	N72-11387	Underwater space suit pressure control regulator [NASA-CASE-MFS-20332-2]	c 05	N73-25125
Evacuation port seal Patent [NASA-CASE-XMF-03290]	c 15	N71-23256	Air bearing assembly for curved surfaces [NASA-CASE-MFS-20423]	c 15	N72-11388	Maxometers (peak wind speed anemometers) [NASA-CASE-MFS-20916]	c 14	N73-25460
Azimuth laying system Patent [NASA-CASE-XMF-01669]	c 21	N71-23289	Stud-bonding gun [NASA-CASE-MFS-20299]	c 15	N72-11392	Monitoring deposition of films [NASA-CASE-MFS-20675]	c 26	N73-26751
						Docking structure for spacecraft [NASA-CASE-MFS-20863]	c 31	N73-26876



Wide temperature range electronic device with lead attachment			Holography utilizing surface plasmon resonances			Method of preparing graphite reinforced aluminum composite		
[NASA-CASE-ERC-10224-2]	c 09	N73-27150	[NASA-CASE-MFS-22040-1]	c 35	N74-26946	[NASA-CASE-MFS-21077-1]	c 24	N75-28135
Restraint system for ergometer			Electrophoretic sample insertion			Carbon monoxide monitor		
[NASA-CASE-MFS-21046-1]	c 14	N73-27377	[NASA-CASE-MFS-21395-1]	c 25	N74-26948	[NASA-CASE-MFS-22060-1]	c 35	N75-29380
Apparatus and method for skin packaging articles			Sprag solenoid brake			Perfluoro alkylene dioxy-bis-(4-phthalic anhydrides and oxy-bis-(perfluoroalkyleneoxyphthalic anhydrides		
[NASA-CASE-MFS-20855]	c 15	N73-27405	[NASA-CASE-MFS-21846-1]	c 37	N74-26976	[NASA-CASE-MFS-22356-1]	c 23	N75-30256
Ergometer			Device for configuring multiple leads			Integrable power gyrator		
[NASA-CASE-MFS-21109-1]	c 05	N73-27941	[NASA-CASE-MFS-22133-1]	c 33	N74-26977	[NASA-CASE-MFS-22342-1]	c 33	N75-30428
Tilting table for ergometer and for other biomedical devices			Thrust-isolating mounting			Isolated output system for a class D switching-mode amplifier		
[NASA-CASE-MFS-21010-1]	c 05	N73-30078	[NASA-CASE-MFS-21680-1]	c 18	N74-27397	[NASA-CASE-MFS-21616-1]	c 33	N75-30429
Measurement system			Battery testing device			Solar energy power system		
[NASA-CASE-MFS-20658-1]	c 14	N73-30386	[NASA-CASE-MFS-20761-1]	c 44	N74-27519	[NASA-CASE-MFS-21628-1]	c 44	N75-32581
Collimator of multiple plates with axially aligned identical random arrays of apertures			Apparatus for establishing flow of a fluid mass having a known velocity			System for enhancing tool-exchange capabilities of a portable wrench		
[NASA-CASE-MFS-20546-2]	c 14	N73-30389	[NASA-CASE-MFS-21424-1]	c 34	N74-27730	[NASA-CASE-MFS-22283-1]	c 37	N75-33395
Holographic thin film analyzer			Apparatus for conducting flow electrophoresis in the substantial absence of gravity			Externally supported internally stabilized flexible duct joint		
[NASA-CASE-MFS-20823-1]	c 16	N73-30476	[NASA-CASE-MFS-21394-1]	c 34	N74-27744	[NASA-CASE-MFS-19194-1]	c 37	N76-14460
Semiconductor surface protection material			Steady state thermal radiometers			Quick disconnect filter coupling		
[NASA-CASE-ERC-10339-1]	c 18	N73-30532	[NASA-CASE-MFS-21108-1]	c 34	N74-27861	[NASA-CASE-MFS-22323-1]	c 37	N76-14463
Polymerizable disilanols having in-chain perfluoroalkyl groups			Conductive elastomeric extensometer			Panel for selectively absorbing solar thermal energy and the method of producing said panel		
[NASA-CASE-MFS-20979-2]	c 06	N73-32030	[NASA-CASE-MFS-21049-1]	c 52	N74-27864	[NASA-CASE-MFS-22562-1]	c 44	N76-14595
Redundant speed control for brushless Hall effect motor			Device for measuring tensile forces			Rapid activation and checkout device for batteries		
[NASA-CASE-MFS-20207-1]	c 09	N73-32107	[NASA-CASE-MFS-21728-1]	c 35	N74-27865	[NASA-CASE-MFS-22749-1]	c 44	N76-14601
Induction motor control system with voltage controlled oscillator circuit			Three mirror glancing incidence system for X-ray telescope			Two stage light gas-plasma projectile accelerator		
[NASA-CASE-MFS-21465-1]	c 10	N73-32145	[NASA-CASE-MFS-21372-1]	c 74	N74-27866	[NASA-CASE-MFS-22287-1]	c 75	N76-14931
Synthesis of superconducting compounds by explosive compaction of powders			Flame detector operable in presence of proton radiation			Polyimides of ether-linked aryl tetracarboxylic dianhydrides		
[NASA-CASE-MFS-20861-1]	c 18	N73-32437	[NASA-CASE-MFS-21577-1]	c 19	N74-29410	[NASA-CASE-MFS-22355-1]	c 23	N76-15268
Ultrasonic scanner for radial and flat panels			Integrated P-channel MOS gyrator			Remotely operable articulated manipulator		
[NASA-CASE-MFS-20335-1]	c 35	N74-10415	[NASA-CASE-MFS-22343-1]	c 33	N74-34638	[NASA-CASE-MFS-22707-1]	c 37	N76-15457
Digital computing cardiograph			System for depositing thin films			Remote manipulator system		
[NASA-CASE-MFS-20284-1]	c 52	N74-12778	[NASA-CASE-MFS-20775-1]	c 31	N75-12161	[NASA-CASE-MFS-22022-1]	c 37	N76-15460
Integrated circuit package with lead structure and method of preparing the same			Ultrasonic bone densitometer			Thermoelectric power system		
[NASA-CASE-MFS-21374-1]	c 33	N74-12951	[NASA-CASE-MFS-20994-1]	c 35	N75-12271	[NASA-CASE-MFS-22002-1]	c 44	N76-16612
Vee-notching device			Strain gauge ambiguity sensor for segmented mirror active optical system			Self-energized plasma compressor		
[NASA-CASE-MFS-20730-1]	c 39	N74-13131	[NASA-CASE-MFS-20506-1]	c 35	N75-12273	[NASA-CASE-MFS-22145-2]	c 75	N76-17951
Ultrasonic scanning system for in-place inspection of brazed tube joints			Orthotic arm joint			Device for measuring the ferrite content in an austenitic stainless-steel weld		
[NASA-CASE-MFS-20767-1]	c 38	N74-15130	[NASA-CASE-MFS-21611-1]	c 54	N75-12616	[NASA-CASE-MFS-22907-1]	c 26	N76-18257
Method and apparatus for checking the stability of a setup for making reflection type holograms			Automatically operable self-leveling load table			Heat transfer device		
[NASA-CASE-MFS-21455-1]	c 35	N74-15146	[NASA-CASE-MFS-22039-1]	c 09	N75-12968	[NASA-CASE-MFS-22938-1]	c 34	N76-18374
Method and apparatus for nondestructive testing			Phase-locked servo system			Holographic motion picture camera with Doppler shift compensation		
[NASA-CASE-MFS-21233-1]	c 38	N74-15395	[NASA-CASE-MFS-22073-1]	c 33	N75-13139	[NASA-CASE-MFS-22517-1]	c 35	N76-18402
Real time moving scene holographic camera system			Self-energized plasma compressor			Method of peening and portable peening gun		
[NASA-CASE-MFS-21087-1]	c 35	N74-17153	[NASA-CASE-MFS-22145-1]	c 75	N75-13625	[NASA-CASE-MFS-23047-1]	c 37	N76-18454
Nonflammable coating compositions			Clear air turbulence detector			Mixing insert for foam dispensing apparatus		
[NASA-CASE-MFS-20486-2]	c 27	N74-17283	[NASA-CASE-MFS-21244-1]	c 36	N75-15028	[NASA-CASE-MFS-20607-1]	c 37	N76-19436
Metering gun for dispensing precisely measured charges of fluid			Variable frequency inverter for ac induction motors with torque, speed and braking control			Traffic survey system		
[NASA-CASE-MFS-21163-1]	c 54	N74-17853	[NASA-CASE-MFS-22088-1]	c 33	N75-15874	[NASA-CASE-MFS-22631-1]	c 66	N76-19888
Omnidirectional wheel			Leak detector			Electronic optical transfer function analyzer		
[NASA-CASE-MFS-21309-1]	c 37	N74-18125	[NASA-CASE-MFS-21761-1]	c 35	N75-15931	[NASA-CASE-MFS-21672-1]	c 74	N76-19935
Reinforced polyquinoxaline gasket and method of preparing the same			Ergometer calibrator			System for imposing directional stability on a rocket-propelled vehicle		
[NASA-CASE-MFS-21364-1]	c 37	N74-18126	[NASA-CASE-MFS-21045-1]	c 35	N75-15932	[NASA-CASE-MFS-21311-1]	c 20	N76-21275
Manual actuator			Space vehicle			Filtering device		
[NASA-CASE-MFS-21481-1]	c 37	N74-18127	[NASA-CASE-MFS-22734-1]	c 18	N75-19329	[NASA-CASE-MFS-22729-1]	c 32	N76-21366
Cryogenic gyroscope housing			Meter for use in detecting tension in straps having predetermined elastic characteristics			Translatory shock absorber for attitude sensors		
[NASA-CASE-MFS-21136-1]	c 35	N74-18323	[NASA-CASE-MFS-22189-1]	c 35	N75-19615	[NASA-CASE-MFS-22905-1]	c 19	N76-22284
Automatic frequency control for FM transmitter			Multiplane focusing collimator			Device for installing rocket engines		
[NASA-CASE-MFS-21540-1]	c 32	N74-19790	[NASA-CASE-MFS-20932-1]	c 35	N75-19616	[NASA-CASE-MFS-19220-1]	c 20	N76-22296
Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver			Latching device			Deployable flexible tunnel		
[NASA-CASE-MFS-21470-1]	c 44	N74-19870	[NASA-CASE-MFS-21606-1]	c 37	N75-19685	[NASA-CASE-MFS-22636-1]	c 37	N76-22540
Reduced gravity fecal collector seat and urnal			Internally supported flexible duct joint			Solar energy absorber		
[NASA-CASE-MFS-22102-1]	c 54	N74-20725	[NASA-CASE-MFS-19193-1]	c 37	N75-19686	[NASA-CASE-MFS-22743-1]	c 44	N76-22657
Metabolic analyzer			Pseudo-noise test set for communication system evaluation			Apparatus for reducing aerodynamic noise in a wind tunnel		
[NASA-CASE-MFS-21415-1]	c 52	N74-20728	[NASA-CASE-MFS-22671-1]	c 35	N75-21582	[NASA-CASE-MFS-23099-1]	c 09	N76-23273
Automatic quadrature control and measuring system			Device for use in loading tension members			Solar energy power system		
[NASA-CASE-MFS-21660-1]	c 35	N74-21017	[NASA-CASE-MFS-21488-1]	c 14	N75-24794	[NASA-CASE-MFS-21628-2]	c 44	N76-23675
Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids			Holographic system for nondestructive testing			Solar energy trap		
[NASA-CASE-MFS-22411-1]	c 37	N74-21058	[NASA-CASE-MFS-21704-1]	c 35	N75-25124	[NASA-CASE-MFS-22744-1]	c 44	N76-24696
Airlock			Hole cutter			Failure detection and control means for improved drift performance of a gimballed platform system		
[NASA-CASE-MFS-20922-1]	c 18	N74-22136	[NASA-CASE-MFS-22649-1]	c 37	N75-25186	[NASA-CASE-MFS-23551-1]	c 04	N76-26175
Low distortion automatic phase control circuit			Apparatus for calibrating an image disector tube			Lead-oxygen dc power supply system having a closed loop oxygen and water system		
[NASA-CASE-MFS-21671-1]	c 33	N74-22885	[NASA-CASE-MFS-22208-1]	c 33	N75-26244	[NASA-CASE-MFS-23059-1]	c 44	N76-27664
Two speed drive system			Method of determining bond quality of power transistors attached to substrates			Thermal energy storage system		
[NASA-CASE-MFS-20645-1]	c 37	N74-23070	[NASA-CASE-MFS-21931-1]	c 37	N75-26372	[NASA-CASE-MFS-23167-1]	c 44	N76-31667
Insert facing tool			Anti-gravity device			Aircraft-mounted crash-activated transmitter device		
[NASA-CASE-MFS-21485-1]	c 37	N74-25968	[NASA-CASE-MFS-22758-1]	c 70	N75-26789	[NASA-CASE-MFS-16609-3]	c 03	N76-32140
LC-oscillator with automatic stabilized amplitude via bias current control			Brazing alloy binder			Multiple in-line docking capability for rotating space stations		
[NASA-CASE-MFS-21698-1]	c 33	N74-26732	[NASA-CASE-XMF-05868]	c 26	N75-27125	[NASA-CASE-MFS-20855-1]	c 15	N77-10112
Device for monitoring a change in mass in varying gravimetric environments			Brazing alloy composition			Attitude control system		
[NASA-CASE-MFS-21556-1]	c 35	N74-26945	[NASA-CASE-XMF-06053]	c 26	N75-27126	[NASA-CASE-MFS-22787-1]	c 15	N77-10113
			Refractory porcelain enamel passive control coating for high temperature alloys			Heat exchanger		
			[NASA-CASE-MFS-22324-1]	c 27	N75-27160	[NASA-CASE-MFS-22991-1]	c 34	N77-10463
			Real time, large volume, moving scene holographic camera system			Focused laser Doppler velocimeter		
			[NASA-CASE-MFS-22537-1]	c 35	N75-27328	[NASA-CASE-MFS-23178-1]	c 35	N77-10499
			Method and apparatus for vibration analysis utilizing the Mossbauer effect					
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[NASA-CASE-GSC-10376-1] c 14 N71-27407  
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[NASA-CASE-GSC-10791-1] c 15 N73-14469  
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[NASA-CASE-GSC-11560-1] c 33 N74-20861  
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[NASA-CASE-ARC-10754-1] c 07 N75-24736

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United Technologies Corp., East Hartford, Conn.

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Method and apparatus for controllably heating fluid  
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High power-high voltage waterload Patent  
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Gas cooled high temperature thermocouple Patent  
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[NASA-CASE-XMS-01991] c 09 N71-21449

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[NASA-CASE-XMS-04919] c 09 N71-23270

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Bearing and gimbal lock mechanism and spiral flex lead module Patent  
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[NASA-CASE-XMS-03542] c 09 N71-28926

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Demodulator for carrier transducers  
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Method and system for in vivo measurement of bone tissue using a two level energy source  
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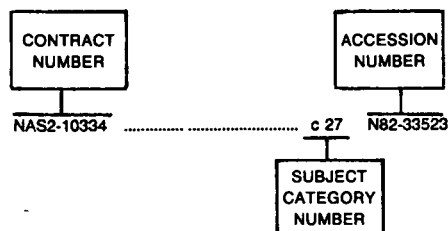


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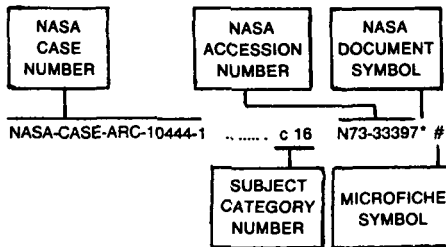


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NASA-CASE-ERC-10150	c 14	N71-28992* #	NASA-CASE-GSC-10082-1	c 10	N72-20221* #	NASA-CASE-GSC-11211-1	c 03	N72-25020* #
NASA-CASE-ERC-10151	c 16	N71-29131* #	NASA-CASE-GSC-10083-1	c 30	N71-16090* #	NASA-CASE-GSC-11214-1	c 06	N73-13128* #
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NASA-CASE-ERC-10276	c 14	N73-26432* #	NASA-CASE-GSC-10221-1	c 09	N72-23171* #	NASA-CASE-GSC-11425-1	c 76	N74-20329* #
NASA-CASE-ERC-10283	c 16	N72-25485* #	NASA-CASE-GSC-10225-1	c 06	N73-27086* #	NASA-CASE-GSC-11425-2	c 76	N75-25730* #
NASA-CASE-ERC-10285	c 10	N73-16206* #	NASA-CASE-GSC-10299-1	c 09	N71-24804* #	NASA-CASE-GSC-11428-1	c 32	N74-20864* #
NASA-CASE-ERC-10292	c 14	N72-25410* #	NASA-CASE-GSC-10303	c 15	N72-22487* #	NASA-CASE-GSC-11434-1	c 34	N74-27859* #
NASA-CASE-ERC-10307	c 08	N72-21198* #	NASA-CASE-GSC-10306-1	c 15	N71-24694* #	NASA-CASE-GSC-11444-1	c 14	N73-28490* #
NASA-CASE-ERC-10324	c 07	N72-25173* #	NASA-CASE-GSC-10344-1	c 03	N72-27053* #	NASA-CASE-GSC-11445-1	c 31	N74-27902* #
NASA-CASE-ERC-10325	c 15	N72-25457* #	NASA-CASE-GSC-10349-1	c 44	N82-24645* #	NASA-CASE-GSC-11446-1	c 33	N74-20860* #
NASA-CASE-ERC-10338	c 04	N72-33072* #	NASA-CASE-GSC-10350-1	c 44	N82-24642* #	NASA-CASE-GSC-11479-1	c 35	N74-28097* #
NASA-CASE-ERC-10339-1	c 18	N73-30532* #	NASA-CASE-GSC-10361-1	c 18	N72-23581* #	NASA-CASE-GSC-11487-1	c 14	N73-30393* #
NASA-CASE-ERC-10350	c 14	N73-20474* #	NASA-CASE-GSC-10366-1	c 10	N71-18772* #	NASA-CASE-GSC-11492-1	c 35	N74-26949* #
NASA-CASE-ERC-10363	c 18	N72-25541* #	NASA-CASE-GSC-10373-1	c 07	N71-19773* #	NASA-CASE-GSC-11513-1	c 33	N74-20862* #
NASA-CASE-ERC-10364	c 18	N72-25540* #	NASA-CASE-GSC-10376-1	c 14	N71-27407* #	NASA-CASE-GSC-11514-1	c 03	N72-24037* #
NASA-CASE-ERC-10365-1	c 31	N73-32749* #	NASA-CASE-GSC-10390-1	c 07	N72-11149* #	NASA-CASE-GSC-11531-1	c 52	N74-27566* #
NASA-CASE-ERC-10392	c 21	N73-14692* #	NASA-CASE-GSC-10413	c 10	N71-26531* #	NASA-CASE-GSC-11533-1	c 14	N73-13435* #
NASA-CASE-ERC-10403-1	c 10	N73-26228* #	NASA-CASE-GSC-10441-1	c 14	N71-27325* #	NASA-CASE-GSC-11551-1	c 37	N76-18459* #
NASA-CASE-ERC-10412-1	c 09	N73-12211* #	NASA-CASE-GSC-10452	c 07	N71-12396* #	NASA-CASE-GSC-11553-1	c 35	N74-15831* #
NASA-CASE-ERC-10419-1	c 03	N75-30132* #	NASA-CASE-GSC-10487-1	c 03	N71-24719* #	NASA-CASE-GSC-11560-1	c 33	N74-20861* #
NASA-CASE-ERC-10439	c 02	N73-19004* #	NASA-CASE-GSC-10503-1	c 14	N72-20381* #	NASA-CASE-GSC-11569-1	c 89	N74-30886* #
NASA-CASE-ERC-10468	c 09	N72-20206* #	NASA-CASE-GSC-10514-1	c 14	N72-20379* #	NASA-CASE-GSC-11571-1	c 36	N77-25499* #
NASA-CASE-ERC-10552	c 09	N71-12539* #	NASA-CASE-GSC-10518-1	c 15	N72-22489* #	NASA-CASE-GSC-11577-1	c 37	N75-15992* #
NASA-CASE-ERC-11020	c 14	N71-26774* #	NASA-CASE-GSC-10553-1	c 07	N71-19854* #	NASA-CASE-GSC-11577-3	c 24	N79-25143* #
			NASA-CASE-GSC-10554-1	c 08	N71-29033* #	NASA-CASE-GSC-11582-1	c 33	N75-19517* #
NASA-CASE-FRC-10005	c 15	N71-26145* #	NASA-CASE-GSC-10555-1	c 21	N71-27324* #	NASA-CASE-GSC-11600-1	c 35	N74-21019* #
NASA-CASE-FRC-10010	c 10	N71-24862* #	NASA-CASE-GSC-10556-1	c 31	N71-26537* #	NASA-CASE-GSC-11602-1	c 33	N74-21850* #
NASA-CASE-FRC-10012	c 14	N72-17329* #	NASA-CASE-GSC-10557-1	c 31	N71-26537* #	NASA-CASE-GSC-11619-1	c 33	N74-32660* #
NASA-CASE-FRC-10019	c 15	N73-12487* #	NASA-CASE-GSC-10564	c 10	N71-29135* #	NASA-CASE-GSC-11620-1	c 34	N75-12222* #
NASA-CASE-FRC-10022	c 12	N71-26546* #	NASA-CASE-GSC-10565-1	c 06	N72-25149* #	NASA-CASE-GSC-11623-1	c 33	N75-25040* #
NASA-CASE-FRC-10029-2	c 05	N72-25121* #	NASA-CASE-GSC-10566-1	c 15	N72-18477* #	NASA-CASE-GSC-11743-1	c 32	N75-24981* #
NASA-CASE-FRC-10029	c 09	N71-24618* #	NASA-CASE-GSC-10590-1	c 31	N73-14853* #			
NASA-CASE-FRC-10036	c 09	N72-22200* #						



NASA-CASE-GSC-11744-1	c 33	N75-26243* #	NASA-CASE-GSC-12331-1	c 18	N80-14183* #	NASA-CASE-KSC-10003	c 10	N73-13235* #
NASA-CASE-GSC-11746-1	c 36	N75-19654* #	NASA-CASE-GSC-12334-1	c 36	N79-14262* #	NASA-CASE-KSC-10020	c 10	N71-27338* #
NASA-CASE-GSC-11752-1	c 77	N75-20140* #	NASA-CASE-GSC-12347-1	c 33	N80-18286* #	NASA-CASE-KSC-10031	c 15	N72-22486* #
NASA-CASE-GSC-11760-1	c 33	N75-19516* #	NASA-CASE-GSC-12348-1	c 74	N80-24149* #	NASA-CASE-KSC-10108	c 14	N73-25461* #
NASA-CASE-GSC-11782-1	c 74	N76-30053* #	NASA-CASE-GSC-12354-1	c 35	N82-24471* #	NASA-CASE-KSC-10126	c 11	N71-24985* #
NASA-CASE-GSC-11783-1	c 33	N75-19516* #	NASA-CASE-GSC-12357-1	c 74	N80-21140* #	NASA-CASE-KSC-10162	c 09	N72-11225* #
NASA-CASE-GSC-11786-1	c 24	N76-24363* #	NASA-CASE-GSC-12360-1	c 33	N81-19392* #	NASA-CASE-KSC-10198	c 07	N71-33108* #
NASA-CASE-GSC-11789-1	c 33	N77-14333* #	NASA-CASE-GSC-12365-1	c 32	N80-28578* #	NASA-CASE-KSC-10242	c 11	N71-28629* #
NASA-CASE-GSC-11824-1	c 33	N77-26386* #	NASA-CASE-GSC-12399-1	c 33	N81-25299* #	NASA-CASE-KSC-10278	c 15	N72-23497* #
NASA-CASE-GSC-11829-1	c 35	N75-27331* #	NASA-CASE-GSC-12410-1	c 33	N79-24260* #	NASA-CASE-KSC-10294	c 05	N72-16015* #
NASA-CASE-GSC-11839-1	c 60	N77-14751* #	NASA-CASE-GSC-12411-1	c 33	N81-14221* #	NASA-CASE-KSC-10326	c 14	N72-18411* #
NASA-CASE-GSC-11839-2	c 60	N78-10709* #	NASA-CASE-GSC-12415-1	c 33	N82-24419* #	NASA-CASE-KSC-10392	c 08	N72-21197* #
NASA-CASE-GSC-11839-3	c 60	N77-32731* #	NASA-CASE-GSC-12420-1	c 33	N82-16340* #	NASA-CASE-KSC-10393	c 07	N72-26117* #
NASA-CASE-GSC-11844-1	c 33	N75-19522* #	NASA-CASE-GSC-12429-1	c 37	N81-14320* #	NASA-CASE-KSC-10397	c 09	N72-21247* #
NASA-CASE-GSC-11849-1	c 33	N76-16332* #	NASA-CASE-GSC-12430-1	c 60	N82-16747* #	NASA-CASE-KSC-10513	c 08	N72-25206* #
NASA-CASE-GSC-11862-1	c 32	N76-18295* #	NASA-CASE-GSC-12442-1	c 33	N82-20398* #	NASA-CASE-KSC-10521	c 15	N72-25453* #
NASA-CASE-GSC-11868-1	c 17	N76-22245* #	NASA-CASE-GSC-12447-1	c 33	N80-21987* #	NASA-CASE-KSC-10565	c 07	N73-20176* #
NASA-CASE-GSC-11877-1	c 74	N76-18913* #	NASA-CASE-GSC-12508-1	c 60	N81-26085* #	NASA-CASE-KSC-10595	c 09	N72-25250* #
NASA-CASE-GSC-11883-1	c 37	N77-19458* #	NASA-CASE-GSC-12513-1	c 04	N81-19343* #	NASA-CASE-KSC-10615	c 08	N73-12176* #
NASA-CASE-GSC-11883-2	c 37	N78-31426* #	NASA-CASE-GSC-12515-1	c 31	N81-26360* #	NASA-CASE-KSC-10626	c 15	N73-12486* #
NASA-CASE-GSC-11889-1	c 35	N76-16393* #	NASA-CASE-GSC-12517-1	c 33	N81-22279* #	NASA-CASE-KSC-10639	c 31	N72-21893* #
NASA-CASE-GSC-11892-1	c 35	N76-15433* #	NASA-CASE-GSC-12528-1	c 33	N82-24421* #	NASA-CASE-KSC-10644	c 14	N73-27378* #
NASA-CASE-GSC-11893-1	c 35	N76-31489* #	NASA-CASE-GSC-12550-1	c 33	N81-22358* #	NASA-CASE-KSC-10654-1	c 15	N73-26472* #
NASA-CASE-GSC-11895-1	c 35	N76-15436* #	NASA-CASE-GSC-12551-1	c 74	N81-24900* #	NASA-CASE-KSC-10667-1	c 09	N72-27227* #
NASA-CASE-GSC-11898-1	c 32	N77-30309* #	NASA-CASE-GSC-12555-1	c 37	N81-12156* #	NASA-CASE-KSC-10698	c 10	N73-31273* #
NASA-CASE-GSC-11902-1	c 38	N77-17495* #	NASA-CASE-GSC-12558-1	c 18	N80-21671* #	NASA-CASE-KSC-10723-1	c 07	N73-30115* #
NASA-CASE-GSC-11909	c 32	N74-20863* #	NASA-CASE-GSC-12565-1	c 33	N80-26601* #	NASA-CASE-KSC-10728-1	c 07	N73-20175* #
NASA-CASE-GSC-11917-2	c 51	N76-29891* #	NASA-CASE-GSC-12566-1	c 35	N82-29580* #	NASA-CASE-KSC-10729-1	c 14	N73-32319* #
NASA-CASE-GSC-11924-1	c 33	N76-27472* #	NASA-CASE-GSC-12567-1	c 52	N82-29863* #	NASA-CASE-KSC-10730-1	c 09	N73-32110* #
NASA-CASE-GSC-11925-1	c 33	N76-18353* #	NASA-CASE-GSC-12582-1	c 36	N82-24485* #	NASA-CASE-KSC-10731-1	c 14	N73-32318* #
NASA-CASE-GSC-11960-1	c 37	N77-14479* #	NASA-CASE-GSC-12584-1	c 36	N82-10390* #	NASA-CASE-KSC-10736-1	c 33	N74-27862* #
NASA-CASE-GSC-11963-1	c 33	N77-10429* #	NASA-CASE-GSC-12587-1	c 33	N82-11359* #	NASA-CASE-KSC-10750-1	c 33	N75-19521* #
NASA-CASE-GSC-11968-1	c 32	N76-15329* #	NASA-CASE-GSC-12592-1	c 37	N81-16469* #	NASA-CASE-KSC-10769-1	c 35	N75-12270* #
NASA-CASE-GSC-11974-1	c 37	N77-19458* #	NASA-CASE-GSC-12595-1	c 37	N82-32730* #	NASA-CASE-KSC-10782-1	c 33	N74-29556* #
NASA-CASE-GSC-11975-1	c 37	N77-19458* #	NASA-CASE-GSC-12609-1	c 35	N82-32659* #	NASA-CASE-KSC-10807-1	c 33	N75-30431* #
NASA-CASE-GSC-11976-1	c 43	N78-10529* #	NASA-CASE-GSC-12614-1	c 36	N81-12407* #	NASA-CASE-KSC-10834-1	c 33	N75-26246* #
NASA-CASE-GSC-11978-1	c 37	N77-17464* #	NASA-CASE-GSC-12619-1	c 33	N82-24422* #	NASA-CASE-KSC-10849-1	c 33	N76-14371* #
NASA-CASE-GSC-11989-1	c 74	N77-28932* #	NASA-CASE-GSC-12622-1	c 36	N81-22344* #	NASA-CASE-KSC-10899-1	c 52	N77-14738* #
NASA-CASE-GSC-11998-1	c 34	N77-32413* #	NASA-CASE-GSC-12630-1	c 35	N81-12386* #	NASA-CASE-KSC-11004-1	c 33	N79-18193* #
NASA-CASE-GSC-12010-1	c 74	N78-18905* #	NASA-CASE-GSC-12636-1	c 37	N81-16470* #	NASA-CASE-KSC-11008-1	c 54	N77-30749* #
NASA-CASE-GSC-12017-1	c 32	N77-30308* #	NASA-CASE-GSC-12640-1	c 37	N81-22359* #	NASA-CASE-KSC-11010-1	c 33	N79-22373* #
NASA-CASE-GSC-12018-1	c 33	N77-14334* #	NASA-CASE-GSC-12643-1	c 32	N82-10287* #	NASA-CASE-KSC-11018-1	c 74	N79-12890* #
NASA-CASE-GSC-12022-1	c 44	N76-28635* #	NASA-CASE-GSC-12645-1	c 37	N80-29705* #	NASA-CASE-KSC-11023-1	c 33	N79-10337* #
NASA-CASE-GSC-12022-2	c 44	N78-24609* #	NASA-CASE-GSC-12646-1	c 74	N82-10862* #	NASA-CASE-KSC-11025-1	c 32	N79-23310* #
NASA-CASE-GSC-12023-1	c 44	N76-28635* #	NASA-CASE-GSC-12650-1	c 37	N81-24447* #	NASA-CASE-KSC-11030-1	c 52	N79-28383* #
NASA-CASE-GSC-12030-1	c 44	N78-24608* #	NASA-CASE-GSC-12652-1	c 33	N81-31482* #	NASA-CASE-KSC-11031-1	c 32	N77-25772* #
NASA-CASE-GSC-12032-2	c 43	N82-13465* #	NASA-CASE-GSC-12658-1	c 33	N81-32391* #	NASA-CASE-KSC-11034-1	c 33	N79-11315* #
NASA-CASE-GSC-12039-1	c 51	N77-22794* #	NASA-CASE-GSC-12682-1	c 33	N82-10324* #	NASA-CASE-KSC-11042-1	c 44	N78-32542* #
NASA-CASE-GSC-12044-1	c 60	N78-17691* #	NASA-CASE-GSC-12686-1	c 52	N82-26961* #	NASA-CASE-KSC-11047-1	c 35	N78-28411* #
NASA-CASE-GSC-12046-1	c 52	N79-14750* #	NASA-CASE-GSC-12697-1	c 35	N82-26629* #	NASA-CASE-KSC-11048-1	c 09	N82-29330* #
NASA-CASE-GSC-12053-1	c 32	N77-28346* #	NASA-CASE-GSC-12725-1	c 74	N82-24973* #	NASA-CASE-KSC-11051-1	c 02	N81-26073* #
NASA-CASE-GSC-12058-1	c 74	N77-26942* #	NASA-CASE-GSC-12756-1	c 27	N82-10227* #	NASA-CASE-KSC-11064-1	c 74	N78-14889* #
NASA-CASE-GSC-12059-1	c 35	N77-27366* #	NASA-CASE-GSC-12762-1	c 31	N82-11312* #	NASA-CASE-KSC-11069-1	c 62	N81-24779* #
NASA-CASE-GSC-12075-1	c 32	N77-31350* #	NASA-CASE-GSC-12770-1	c 37	N82-29603* #	NASA-CASE-KSC-11076-1	c 33	N79-14305* #
NASA-CASE-GSC-12077-1	c 35	N77-24455* #		c 74	N82-30073* #	NASA-CASE-KSC-11085-1	c 31	N81-14137* #
NASA-CASE-GSC-12081-2	c 52	N82-22875* #		c 37	N82-26629* #	NASA-CASE-KSC-11091-1	c 33	N81-26359* #
NASA-CASE-GSC-12082-1	c 54	N76-22914* #		c 34	N82-10358* #	NASA-CASE-KSC-11097-1	c 52	N79-26772* #
NASA-CASE-GSC-12082-2	c 52	N81-25661* #				NASA-CASE-KSC-11099-1	c 34	N81-26402* #
NASA-CASE-GSC-12083-1	c 73	N78-32848* #				NASA-CASE-KSC-11104-1	c 54	N81-24724* #
NASA-CASE-GSC-12088-1	c 74	N78-13874* #				NASA-CASE-KSC-11107-1	c 27	N82-33520* #
NASA-CASE-GSC-12110-1	c 27	N77-32308* #	NASA-CASE-HQN-00573-1	c 37	N79-33468* #	NASA-CASE-KSC-11110-1	c 47	N82-24779* #
NASA-CASE-GSC-12111-2	c 33	N81-29342* #	NASA-CASE-HQN-00936	c 31	N71-29050* #	NASA-CASE-KSC-11170-1	c 74	N81-12862* #
NASA-CASE-GSC-12115-1	c 62	N76-31946* #	NASA-CASE-HQN-00937	c 07	N71-28979* #	NASA-CASE-KSC-11218-1	c 33	N81-29347* #
NASA-CASE-GSC-12137-1	c 33	N78-32338* #	NASA-CASE-HQN-00938	c 33	N71-29053* #		c 09	N82-29331* #
NASA-CASE-GSC-12138-1	c 33	N79-20314* #	NASA-CASE-HQN-10037-1	c 14	N73-27376* #			
NASA-CASE-GSC-12143-1	c 35	N77-32456* #	NASA-CASE-HQN-10069	c 33	N75-27251* #			
NASA-CASE-GSC-12145-1	c 33	N78-32339* #	NASA-CASE-HQN-10074-1	c 27	N82-29451* #			
NASA-CASE-GSC-12146-1	c 33	N78-32340* #	NASA-CASE-HQN-10328-2	c 27	N82-29454* #	NASA-CASE-LAR-02743	c 14	N73-32324* #
NASA-CASE-GSC-12147-1	c 32	N81-27341* #	NASA-CASE-HQN-10364	c 06	N71-27363* #	NASA-CASE-LAR-10000	c 14	N73-30394* #
NASA-CASE-GSC-12148-1	c 32	N79-20296* #	NASA-CASE-HQN-10439	c 21	N72-21624* #	NASA-CASE-LAR-10007-1	c 05	N71-11195* #
NASA-CASE-GSC-12150-1	c 32	N79-11265* #	NASA-CASE-HQN-10462	c 25	N75-29192* #	NASA-CASE-LAR-10031	c 15	N72-22484* #
NASA-CASE-GSC-12158-1	c 51	N78-22585* #	NASA-CASE-HQN-10537-1	c 06	N72-10138* #	NASA-CASE-LAR-10056	c 05	N71-12351* #
NASA-CASE-GSC-12168-1	c 31	N79-17029* #	NASA-CASE-HQN-10541-1	c 07	N71-26291* #	NASA-CASE-LAR-10061-1	c 15	N72-31483* #
NASA-CASE-GSC-12171-1	c 33	N79-28416* #	NASA-CASE-HQN-10542-1	c 15	N71-27135* #	NASA-CASE-LAR-10073-1	c 37	N76-24575* #
NASA-CASE-GSC-12173-1	c 51	N79-10694* #	NASA-CASE-HQN-10543-1	c 23	N72-23695* #	NASA-CASE-LAR-10076-1	c 05	N73-20137* #
NASA-CASE-GSC-12190-1	c 33	N79-12321* #	NASA-CASE-HQN-10544-1	c 16	N71-27183* #	NASA-CASE-LAR-10083-1	c 15	N71-27006* #
NASA-CASE-GSC-12191-1	c 31	N80-32583* #	NASA-CASE-HQN-10545-1	c 74	N75-25706* #	NASA-CASE-LAR-10089-1	c 34	N74-23066* #
NASA-CASE-GSC-12194-2	c 20	N82-18314* #	NASA-CASE-HQN-10595-1	c 27	N82-29455* #	NASA-CASE-LAR-10098	c 32	N71-26681* #
NASA-CASE-GSC-12207-1	c 24	N79-14156* #	NASA-CASE-HQN-10638-1	c 15	N73-30460* #	NASA-CASE-LAR-10102-1	c 05	N72-23085* #
NASA-CASE-GSC-12219-1	c 35	N80-18359* #	NASA-CASE-HQN-10654-1	c 16	N73-13489* #	NASA-CASE-LAR-10103-1	c 15	N73-14468* #
NASA-CASE-GSC-12223-1	c 60	N79-27864* #	NASA-CASE-HQN-10683	c 14	N71-34389* #	NASA-CASE-LAR-10105-1	c 34	N74-15652* #
NASA-CASE-GSC-12225-1	c 74	N79-14891* #	NASA-CASE-HQN-10703	c 21	N73-13643* #	NASA-CASE-LAR-10106-1	c 15	N71-27169* #
NASA-CASE-GSC-12228-1	c 33	N79-10338* #	NASA-CASE-HQN-10740-1	c 72	N74-19310* #	NASA-CASE-LAR-10121-1	c 15	N71-26721* #
NASA-CASE-GSC-12237-1	c 36	N80-14384* #	NASA-CASE-HQN-10756-1	c 14	N72-25428* #	NASA-CASE-LAR-10128-1	c 08	N73-20217* #
NASA-CASE-GSC-12253-1	c 34	N79-31523* #	NASA-CASE-HQN-10780	c 14	N71-30265* #	NASA-CASE-LAR-10129-1	c 15	N73-25512* #
NASA-CASE-GSC-12263-1	c 74	N79-20857* #	NASA-CASE-HQN-10790-1	c 23	N71-30292* #	NASA-CASE-LAR-10129-2	c 37	N74-20063* #
NASA-CASE-GSC-12273-1	c 35	N80-21719* #	NASA-CASE-HQN-10832-1	c 36	N74-11313* #	NASA-CASE-LAR-10135-1	c 09	N79-21083* #
NASA-CASE-GSC-12274-1	c 37	N79-28550* #	NASA-CASE-HQN-10841-1	c 33	N74-11049* #	NASA-CASE-LAR-10137-1	c 09	N72-22204* #
NASA-CASE-GSC-12289-1	c 37	N80-32717* #	NASA-CASE-HQN-10844-1	c 71	N74-21014* #	NASA-CASE-LAR-10163-1	c 09	N72-25247* #
NASA-CASE-GSC-12291-1	c 76	N80-18951* #	NASA-CASE-HQN-10862-1	c 73	N78-19920* #	NASA-CASE-LAR-10168-1	c 33	N74-22865* #
NASA-CASE-GSC-12297-1	c 37	N79-28549* #	NASA-CASE-HQN-10876-1	c 36	N75-19653* #	NASA-CASE-LAR-10170-1	c 37	N74-11301* #
NASA-CASE-GSC-12303-1	c 24	N79-31347* #	NASA-CASE-HQN-10880-1	c 44	N76-29699* #	NASA-CASE-LAR-10173-1	c 27	N71-14090* #
NASA-CASE-GSC-12318-1	c 37	N80-23655* #	NASA-CASE-HQN-10888-1	c 33	N76-27473* #	NASA-CASE-LAR-10176-1	c 14	N72-20380* #
NASA-CASE-GSC-12321-1	c 36	N82-16396* #	NASA-CASE-HQN-10931-2	c 17	N78-17140* #	NASA-CASE-LAR-10180-1	c 14	N71-13461* #
NASA-CASE-GSC-12322-1	c 37	N80-14398* #		c 44	N79-14527* #	NASA-CASE-LAR-10184	c 06	N72-22445* #
NASA-CASE-GSC-12324-1	c 33	N81-33403* #		c 27	N82-29452* #	NASA-CASE-LAR-10193-1	c 15	N71-27146* #
			NASA-CASE-KSC-10002	c 10	N71-25865* #	NASA-CASE-LAR-10194-1	c 34	N74-30608* #



NASA-CASE-LAR-10195-1	c 15	N73-19458* #	NASA-CASE-LAR-10841-1	c 31	N74-27900* #	NASA-CASE-LAR-11889-1	c 35	N79-26372* #
NASA-CASE-LAR-10203-1	c 15	N72-16330* #	NASA-CASE-LAR-10855-1	c 14	N73-13415* #	NASA-CASE-LAR-11889-2	c 37	N78-27424* #
NASA-CASE-LAR-10204	c 14	N71-27215* #	NASA-CASE-LAR-10862-1	c 35	N74-15092* #	NASA-CASE-LAR-11898-1	c 24	N78-10214* #
NASA-CASE-LAR-10208-1	c 35	N76-18400* #	NASA-CASE-LAR-10868-1	c 33	N74-11050* #	NASA-CASE-LAR-11898-2	c 24	N78-17149* #
NASA-CASE-LAR-10218-1	c 09	N70-34559* #	NASA-CASE-LAR-10894-1	c 18	N73-14584* #	NASA-CASE-LAR-11900-1	c 37	N79-14382* #
NASA-CASE-LAR-10226-1	c 14	N73-19419* #	NASA-CASE-LAR-10900-1	c 37	N74-23064* #	NASA-CASE-LAR-11902-1	c 27	N78-17206* #
NASA-CASE-LAR-10241-1	c 54	N74-14845* #	NASA-CASE-LAR-10907-1	c 35	N76-29551* #	NASA-CASE-LAR-11903-2	c 34	N82-20465* #
NASA-CASE-LAR-10249-1	c 02	N71-26110* #	NASA-CASE-LAR-10910-1	c 35	N74-13132* #	NASA-CASE-LAR-11919-1	c 07	N78-27121* #
NASA-CASE-LAR-10253-1	c 09	N72-25258* #	NASA-CASE-LAR-10913	c 14	N72-16282* #	NASA-CASE-LAR-11922-1	c 25	N79-24073* #
NASA-CASE-LAR-10256-1	c 85	N74-34672* #	NASA-CASE-LAR-10941-1	c 37	N74-21057* #	NASA-CASE-LAR-11932-1	c 05	N78-32086* #
NASA-CASE-LAR-10270-1	c 32	N72-25877* #	NASA-CASE-LAR-10942-1	c 17	N73-27446* #	NASA-CASE-LAR-11970-2	c 08	N81-19130* #
NASA-CASE-LAR-10274-1	c 14	N71-17626* #	NASA-CASE-LAR-10953-1	c 33	N76-14372* #	NASA-CASE-LAR-11973-1	c 35	N78-27384* #
NASA-CASE-LAR-10276-1	c 09	N75-15662* #	NASA-CASE-LAR-10970-1	c 24	N75-13032* #	NASA-CASE-LAR-11995-1	c 28	N77-10213* #
NASA-CASE-LAR-10294-1	c 26	N72-28762* #	NASA-CASE-LAR-10994-1	c 32	N76-14321* #	NASA-CASE-LAR-11999-1	c 44	N80-18552* #
NASA-CASE-LAR-10295-1	c 35	N74-21062* #	NASA-CASE-LAR-11021-1	c 35	N74-18088* #	NASA-CASE-LAR-12007-2	c 74	N79-25876* #
NASA-CASE-LAR-10305	c 14	N71-26137* #	NASA-CASE-LAR-11027-1	c 33	N75-27252* #	NASA-CASE-LAR-12009-1	c 44	N78-15560* #
NASA-CASE-LAR-10310-1	c 10	N73-20253* #	NASA-CASE-LAR-11042-1	c 15	N76-14158* #	NASA-CASE-LAR-12016-1	c 39	N78-15512* #
NASA-CASE-LAR-10311-1	c 16	N73-16536* #	NASA-CASE-LAR-11051-1	c 25	N74-18551* #	NASA-CASE-LAR-12018-1	c 20	N78-24275* #
NASA-CASE-LAR-10317-1	c 32	N71-16103* #	NASA-CASE-LAR-11053-1	c 76	N75-12810* #	NASA-CASE-LAR-12019-1	c 24	N78-17150* #
NASA-CASE-LAR-10318-1	c 31	N74-18089* #	NASA-CASE-LAR-11059-1	c 35	N75-12272* #	NASA-CASE-LAR-12027-1	c 39	N79-22537* #
NASA-CASE-LAR-10319-1	c 14	N73-32322* #	NASA-CASE-LAR-11069-1	c 35	N75-19611* #	NASA-CASE-LAR-12045-1	c 34	N77-24423* #
NASA-CASE-LAR-10320-1	c 09	N72-23172* #	NASA-CASE-LAR-11071-1	c 51	N75-13502* #	NASA-CASE-LAR-12046-1	c 25	N78-15210* #
NASA-CASE-LAR-10323-1	c 12	N71-17573* #	NASA-CASE-LAR-11074-1	c 32	N75-26282* #	NASA-CASE-LAR-12052-1	c 18	N81-29152* #
NASA-CASE-LAR-10337-1	c 24	N75-30260* #	NASA-CASE-LAR-11112-1	c 32	N76-15330* #	NASA-CASE-LAR-12054-1	c 27	N79-33316* #
NASA-CASE-LAR-10348-1	c 11	N73-12264* #	NASA-CASE-LAR-11118	c 12	N71-20436* #	NASA-CASE-LAR-12054-2	c 27	N81-14078* #
NASA-CASE-LAR-10365-1	c 05	N72-27102* #	NASA-CASE-LAR-11139-1	c 35	N74-32878* #	NASA-CASE-LAR-12056-1	c 24	N81-14000* #
NASA-CASE-LAR-10372	c 09	N71-18599* #	NASA-CASE-LAR-11141-1	c 07	N74-32418* #	NASA-CASE-LAR-12065-2	c 24	N81-33235* #
NASA-CASE-LAR-10373-1	c 18	N71-26155* #	NASA-CASE-LAR-11144-1	c 25	N75-26043* #	NASA-CASE-LAR-12077-1	c 31	N81-25259* #
NASA-CASE-LAR-10385-2	c 70	N74-13436* #	NASA-CASE-LAR-11155-1	c 35	N74-15091* #	NASA-CASE-LAR-12095-1	c 31	N81-25258* #
NASA-CASE-LAR-10385-3	c 74	N78-15879* #	NASA-CASE-LAR-11173-1	c 35	N75-19614* #	NASA-CASE-LAR-12099-1	c 27	N80-16158* #
NASA-CASE-LAR-10403	c 21	N71-11766* #	NASA-CASE-LAR-11201-1	c 35	N78-24515* #	NASA-CASE-LAR-12106-1	c 71	N78-14867* #
NASA-CASE-LAR-10409-1	c 31	N74-21059* #	NASA-CASE-LAR-11207-1	c 35	N75-19613* #	NASA-CASE-LAR-12136-1	c 08	N81-33210* #
NASA-CASE-LAR-10416-1	c 24	N74-30001* #	NASA-CASE-LAR-11208-1	c 44	N78-32539* #	NASA-CASE-LAR-12147-1	c 31	N79-11246* #
NASA-CASE-LAR-10423-1	c 23	N82-29358* #	NASA-CASE-LAR-11211-1	c 37	N75-12326* #	NASA-CASE-LAR-12148-1	c 44	N82-24640* #
NASA-CASE-LAR-10426-1	c 09	N74-19528* #	NASA-CASE-LAR-11213-1	c 35	N75-15014* #	NASA-CASE-LAR-12149-2	c 09	N79-31228* #
NASA-CASE-LAR-10439-1	c 33	N73-27796* #	NASA-CASE-LAR-11224-1	c 37	N76-18456* #	NASA-CASE-LAR-12175-1	c 05	N82-28279* #
NASA-CASE-LAR-10440-1	c 14	N73-32323* #	NASA-CASE-LAR-11237-1	c 35	N75-19612* #	NASA-CASE-LAR-12176-1	c 36	N80-16321* #
NASA-CASE-LAR-10450-1	c 37	N74-27905* #	NASA-CASE-LAR-11252-1	c 05	N75-25914* #	NASA-CASE-LAR-12177-1	c 36	N81-24422* #
NASA-CASE-LAR-10483-1	c 14	N73-32327* #	NASA-CASE-LAR-11263-1	c 35	N75-33369* #	NASA-CASE-LAR-12178-1	c 74	N80-21138* #
NASA-CASE-LAR-10489-1	c 31	N74-18124* #	NASA-CASE-LAR-11310-1	c 07	N77-28118* #	NASA-CASE-LAR-12181-1	c 27	N78-17205* #
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NASA-CASE-LAR-10511-1	c 09	N72-29172* #	NASA-CASE-LAR-11361-1	c 44	N77-22607* #	NASA-CASE-LAR-12215-1	c 08	N79-23097* #
NASA-CASE-LAR-10513-1	c 07	N72-25170* #	NASA-CASE-LAR-11370-1	c 35	N80-28686* #	NASA-CASE-LAR-12230-1	c 35	N79-14347* #
NASA-CASE-LAR-10523-1	c 14	N72-22444* #	NASA-CASE-LAR-11387-1	c 04	N76-20114* #	NASA-CASE-LAR-12250-1	c 14	N81-26161* #
NASA-CASE-LAR-10539-1	c 17	N73-12547* #	NASA-CASE-LAR-11387-2	c 04	N77-19056* #	NASA-CASE-LAR-12251-1	c 74	N79-14892* #
NASA-CASE-LAR-10541-1	c 15	N72-32487* #	NASA-CASE-LAR-11389-1	c 33	N77-26387* #	NASA-CASE-LAR-12251-1	c 74	N80-27185* #
NASA-CASE-LAR-10544-1	c 37	N74-13178* #	NASA-CASE-LAR-11390-1	c 32	N77-21267* #	NASA-CASE-LAR-12260-1	c 35	N79-10390* #
NASA-CASE-LAR-10545-1	c 09	N72-21244* #	NASA-CASE-LAR-11397-1	c 27	N75-29263* #	NASA-CASE-LAR-12261-1	c 02	N80-20224* #
NASA-CASE-LAR-10546-1	c 11	N72-25287* #	NASA-CASE-LAR-11405-1	c 45	N76-31714* #	NASA-CASE-LAR-12264-1	c 15	N78-32168* #
NASA-CASE-LAR-10547-1	c 31	N74-13177* #	NASA-CASE-LAR-11428-1	c 35	N74-34857* #	NASA-CASE-LAR-12268-1	c 08	N81-24106* #
NASA-CASE-LAR-10549-1	c 31	N73-13898* #	NASA-CASE-LAR-11434-1	c 35	N76-22509* #	NASA-CASE-LAR-12269-1	c 35	N80-18358* #
NASA-CASE-LAR-10550-1	c 09	N74-30597* #	NASA-CASE-LAR-11435-1	c 35	N76-15432* #	NASA-CASE-LAR-12275-1	c 35	N79-18296* #
NASA-CASE-LAR-10551-1	c 25	N74-12813* #	NASA-CASE-LAR-11458-1	c 35	N76-16392* #	NASA-CASE-LAR-12285-1	c 35	N80-28687* #
NASA-CASE-LAR-10557	c 02	N72-11018* #	NASA-CASE-LAR-11465-1	c 37	N76-21554* #	NASA-CASE-LAR-12304-1	c 35	N80-20559* #
NASA-CASE-LAR-10574-1	c 11	N73-13257* #	NASA-CASE-LAR-11476-1	c 07	N76-27232* #	NASA-CASE-LAR-12308-1	c 35	N81-29407* #
NASA-CASE-LAR-10578-1	c 12	N73-25262* #	NASA-CASE-LAR-11490-1	c 39	N78-16387* #	NASA-CASE-LAR-12315-1	c 37	N82-24490* #
NASA-CASE-LAR-10585-1	c 02	N76-22154* #	NASA-CASE-LAR-11500-1	c 35	N76-24523* #	NASA-CASE-LAR-12320-1	c 54	N81-27806* #
NASA-CASE-LAR-10586-1	c 19	N74-15089* #	NASA-CASE-LAR-11549-1	c 37	N77-11397* #	NASA-CASE-LAR-12321-1	c 35	N82-24470* #
NASA-CASE-LAR-10590-1	c 15	N70-26819* #	NASA-CASE-LAR-11551-1	c 44	N80-29834* #	NASA-CASE-LAR-12326-1	c 02	N81-14968* #
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NASA-CASE-LAR-10612-1	c 12	N73-28144* #	NASA-CASE-LAR-11563-1	c 37	N77-23482* #	NASA-CASE-LAR-12344-1	c 43	N80-18498* #
NASA-CASE-LAR-10620-1	c 09	N72-25255* #	NASA-CASE-LAR-11570-1	c 34	N76-18364* #	NASA-CASE-LAR-12361-1	c 37	N81-12422* #
NASA-CASE-LAR-10623-1	c 14	N73-30395* #	NASA-CASE-LAR-11575-1	c 02	N76-16014* #	NASA-CASE-LAR-12363-1	c 35	N82-31659* #
NASA-CASE-LAR-10626-1	c 19	N74-21015* #	NASA-CASE-LAR-11607-1	c 32	N77-14292* #	NASA-CASE-LAR-12372-1	c 37	N82-18601* #
NASA-CASE-LAR-10629-1	c 35	N75-33367* #	NASA-CASE-LAR-11617-2	c 35	N78-32397* #	NASA-CASE-LAR-12375-1	c 32	N79-24203* #
NASA-CASE-LAR-10634-1	c 37	N74-18123* #	NASA-CASE-LAR-11645-1	c 02	N77-10001* #	NASA-CASE-LAR-12393-1	c 39	N80-25693* #
NASA-CASE-LAR-10642-1	c 07	N74-31270* #	NASA-CASE-LAR-11648-1	c 55	N77-14407* #	NASA-CASE-LAR-12396-1	c 02	N79-24958* #
NASA-CASE-LAR-10668-1	c 06	N73-16106* #	NASA-CASE-LAR-11649-1	c 51	N77-27677* #	NASA-CASE-LAR-12406-1	c 05	N81-26114* #
NASA-CASE-LAR-10670-1	c 06	N73-30097* #	NASA-CASE-LAR-11658-1	c 37	N77-14478* #	NASA-CASE-LAR-12412-1	c 08	N82-24205* #
NASA-CASE-LAR-10670-2	c 15	N74-27360* #	NASA-CASE-LAR-11667-1	c 52	N76-19785* #	NASA-CASE-LAR-12441-1	c 09	N82-23254* #
NASA-CASE-LAR-10682-1	c 02	N73-26004* #	NASA-CASE-LAR-11674-1	c 07	N76-18117* #	NASA-CASE-LAR-12443-1	c 74	N82-19030* #
NASA-CASE-LAR-10686	c 14	N71-28935* #	NASA-CASE-LAR-11675-1	c 45	N76-17656* #	NASA-CASE-LAR-12458-1	c 09	N81-31230* #
NASA-CASE-LAR-10688-1	c 37	N74-21056* #	NASA-CASE-LAR-11688-1	c 24	N82-26384* #	NASA-CASE-LAR-12465-1	c 33	N82-26572* #
NASA-CASE-LAR-10717-1	c 21	N73-30641* #	NASA-CASE-LAR-11690-1	c 35	N80-14371* #	NASA-CASE-LAR-12468-1	c 08	N82-32373* #
NASA-CASE-LAR-10726-1	c 14	N73-20475* #	NASA-CASE-LAR-11695-2	c 37	N80-18402* #	NASA-CASE-LAR-12469-1	c 35	N81-12388* #
NASA-CASE-LAR-10728-1	c 14	N73-12445* #	NASA-CASE-LAR-11695-2	c 37	N81-24443* #	NASA-CASE-LAR-12471-1	c 52	N82-29862* #
NASA-CASE-LAR-10730-1	c 33	N74-10223* #	NASA-CASE-LAR-11709-1	c 37	N76-27567* #	NASA-CASE-LAR-12474-1	c 35	N82-26628* #
NASA-CASE-LAR-10739-1	c 14	N73-16484* #	NASA-CASE-LAR-11711-1	c 74	N78-17866* #	NASA-CASE-LAR-12482-1	c 37	N82-32732* #
NASA-CASE-LAR-10753-1	c 08	N74-30421* #	NASA-CASE-LAR-11726-1	c 37	N76-27568* #	NASA-CASE-LAR-12495-1	c 44	N81-32609* #
NASA-CASE-LAR-10756-1	c 32	N73-26910* #	NASA-CASE-LAR-11729-1	c 34	N79-12359* #	NASA-CASE-LAR-12513-1	c 44	N82-32841* #
NASA-CASE-LAR-10765-1	c 32	N73-20740* #	NASA-CASE-LAR-11745-1	c 32	N80-29539* #	NASA-CASE-LAR-12520-1	c 51	N81-28698* #
NASA-CASE-LAR-10773-3	c 51	N77-25769* #	NASA-CASE-LAR-11782-1	c 74	N77-20882* #	NASA-CASE-LAR-12531-1	c 35	N81-31529* #
NASA-CASE-LAR-10774	c 10	N71-13545* #	NASA-CASE-LAR-11797-1	c 05	N81-19087* #	NASA-CASE-LAR-12532-1	c 09	N82-11088* #
NASA-CASE-LAR-10776-1	c 02	N74-10034* #	NASA-CASE-LAR-11821-1	c 26	N80-28492* #	NASA-CASE-LAR-12540-2	c 07	N82-24345* #
NASA-CASE-LAR-10782-1	c 31	N74-14133* #	NASA-CASE-LAR-11825-1	c 35	N77-22449* #	NASA-CASE-LAR-12541-1	c 25	N82-18203* #
NASA-CASE-LAR-10782-2	c 31	N75-13111* #	NASA-CASE-LAR-11827-1	c 32	N77-10392* #	NASA-CASE-LAR-12544-1	c 07	N81-27096* #
NASA-CASE-LAR-10799-2	c 34	N76-17317* #	NASA-CASE-LAR-11828-1	c 27	N78-32261* #	NASA-CASE-LAR-12547-1	c 24	N82-25324* #
NASA-CASE-LAR-10800-1	c 33	N72-27959* #	NASA-CASE-LAR-11855-1	c 37	N81-14319* #	NASA-CASE-LAR-12552-1	c 35	N82-11431* #
NASA-CASE-LAR-10805-2	c 34	N77-18382* #	NASA-CASE-LAR-11859-1	c 35	N79-14349* #	NASA-CASE-LAR-12562-1	c 08	N81-26152* #
NASA-CASE-LAR-10806-1	c 35	N74-32877* #	NASA-CASE-LAR-11868-2	c 08	N79-14108* #	NASA-CASE-LAR-12564-2	c 37	N82-18604* #
NASA-CASE-LAR-10812-1	c 09	N74-17955* #	NASA-CASE-LAR-11869-1	c 74	N78-27904* #	NASA-CASE-LAR-12588-1	c 44	N81-24525* #
NASA-CASE-LAR-10815-1	c 16	N72-22520* #	NASA-CASE-LAR-11883-1	c 09	N77-27131* #	NASA-CASE-LAR-12592-1	c 36	N82-13415* #
NASA-CASE-LAR-10836-1	c 26	N72-27784* #				NASA-CASE-LAR-12595-1	c 33	N82-26571* #



NASA-CASE-LAR-12602-1	c 35	N81-19429* #	NASA-CASE-LEW-11058-1	c 20	N74-13502* #	NASA-CASE-LEW-12119-1	c 37	N80-28711* #
NASA-CASE-LAR-12615-1	c 05	N81-32138* #	NASA-CASE-LEW-11065-2	c 44	N76-14600* #	NASA-CASE-LEW-12119-2	c 37	N81-26447* #
NASA-CASE-LAR-12620-1	c 24	N82-32417* #	NASA-CASE-LEW-11069-1	c 44	N74-14784* #	NASA-CASE-LEW-12131-1	c 37	N79-18318* #
NASA-CASE-LAR-12624-1	c 03	N81-29107* #	NASA-CASE-LEW-11072-1	c 14	N73-24472* #	NASA-CASE-LEW-12131-2	c 37	N80-26658* #
NASA-CASE-LAR-12630-1	c 06	N82-29319* #	NASA-CASE-LEW-11072-2	c 35	N76-15434* #	NASA-CASE-LEW-12131-3	c 37	N82-19540* #
NASA-CASE-LAR-12631-1	c 35	N82-18557* #	NASA-CASE-LEW-11076-1	c 37	N74-21061* #	NASA-CASE-LEW-12137-1	c 25	N78-10224* #
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NASA-CASE-LAR-12638-1	c 44	N82-24716* #	NASA-CASE-LEW-11076-3	c 37	N75-30562* #	NASA-CASE-LEW-12174-2	c 36	N77-32478* #
NASA-CASE-LAR-12640-1	c 04	N82-26260* #	NASA-CASE-LEW-11076-4	c 37	N76-15461* #	NASA-CASE-LEW-12185-1	c 35	N79-14346* #
NASA-CASE-LAR-12642-1	c 27	N81-29229* #	NASA-CASE-LEW-11087-1	c 15	N73-30458* #	NASA-CASE-LEW-12217-1	c 44	N78-25528* #
NASA-CASE-LAR-12644-1	c 37	N82-29605* #	NASA-CASE-LEW-11087-2	c 37	N74-15128* #	NASA-CASE-LEW-12220-1	c 43	N78-14452* #
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NASA-CASE-LAR-12738-1	c 18	N82-33419* #	NASA-CASE-LEW-11187-1	c 28	N73-19793* #	NASA-CASE-LEW-12313-1	c 07	N77-32148* #
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NASA-CASE-LAR-12744-1	c 37	N81-31551* #	NASA-CASE-LEW-11227-1	c 73	N75-30876* #	NASA-CASE-LEW-12358-1	c 37	N78-10467* #
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NASA-CASE-LAR-12772-1	c 33	N81-15195* #	NASA-CASE-LEW-11274-1	c 37	N75-21631* #	NASA-CASE-LEW-12378-1	c 44	N77-22606* #
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NASA-CASE-LAR-12785-1	c 34	N82-24448* #	NASA-CASE-LEW-11325-1	c 06	N73-27980* #	NASA-CASE-LEW-12389-3	c 07	N78-18066* #
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NASA-CASE-LAR-12843-1	c 05	N82-33372* #	NASA-CASE-LEW-11387-1	c 37	N74-18128* #	NASA-CASE-LEW-12441-3	c 34	N80-24573* #
NASA-CASE-LAR-12860-1	c 05	N82-26278* #	NASA-CASE-LEW-11388-1	c 15	N73-32358* #	NASA-CASE-LEW-12443-1	c 44	N81-24519* #
NASA-CASE-LAR-12864-1	c 37	N82-29606* #	NASA-CASE-LEW-11388-2	c 37	N74-21055* #	NASA-CASE-LEW-12444-1	c 44	N81-19561* #
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NASA-CASE-LAR-12881-1	c 27	N82-26464* #	NASA-CASE-LEW-11402-1	c 07	N74-28226* #	NASA-CASE-LEW-12452-1	c 07	N78-25089* #
NASA-CASE-LAR-12882-1	c 54	N81-31848* #	NASA-CASE-LEW-11484-1	c 24	N75-33181* #	NASA-CASE-LEW-12477-1	c 25	N78-25148* #
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NASA-CASE-LEW-10155-1	c 09	N71-29035* #	NASA-CASE-LEW-11583-1	c 35	N79-17192* #	NASA-CASE-LEW-12527-1	c 37	N77-32500* #
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NASA-CASE-LEW-10250-1	c 22	N71-28759* #	NASA-CASE-LEW-11669-1	c 05	N73-27062* #	NASA-CASE-LEW-12552-1	c 44	N78-25527* #
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NASA-CASE-LEW-10281-1	c 14	N72-17327* #	NASA-CASE-LEW-11676-1	c 37	N76-22541* #	NASA-CASE-LEW-12554-1	c 34	N78-18355* #
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NASA-CASE-LEW-10359	c 33	N72-25911* #	NASA-CASE-LEW-11860-1	c 37	N76-18458* #	NASA-CASE-LEW-12608-1	c 07	N77-27116* #
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NASA-CASE-LEW-10387	c 09	N72-22201* #	NASA-CASE-LEW-11876-1	c 20	N76-21276* #	NASA-CASE-LEW-12658-1	c 71	N79-14871* #
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NASA-CASE-LEW-10436-1	c 17	N73-32415* #	NASA-CASE-LEW-11915-1	c 35	N76-14431* #	NASA-CASE-LEW-12723-1	c 52	N80-18680* #
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NASA-CASE-LEW-10794-1	c 06	N72-17093* #	NASA-CASE-LEW-12013-1	c 33	N79-10339* #	NASA-CASE-LEW-12830-1	c 07	N77-23106* #
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NASA-CASE-LEW-10814-1	c 28	N70-35422* #	NASA-CASE-LEW-12050-1	c 35	N77-32454* #	NASA-CASE-LEW-12906-1	c 26	N77-32279* #
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NASA-CASE-LEW-11005-1	c 09	N72-21243* #	NASA-CASE-LEW-12094-1	c 76	N76-25049* #	NASA-CASE-LEW-12950-1	c 34	N82-11399* #
NASA-CASE-LEW-11015	c 26	N73-32571* #	NASA-CASE-LEW-12095-1	c 26	N78-18182* #	NASA-CASE-LEW-12955-1	c 52	N80-14684* #
NASA-CASE-LEW-11026-1	c 15	N73-33383* #	NASA-CASE-LEW-121					



NASA-CASE-LEW-12972-1	c 44	N79-25481* #	NASA-CASE-MFS-14405	c 15	N72-28495* #	NASA-CASE-MFS-20861-1	c 18	N73-32437* #
NASA-CASE-LEW-12982-1	c 37	N81-19455* #	NASA-CASE-MFS-14610	c 09	N71-28886* #	NASA-CASE-MFS-20863	c 31	N73-26876* #
NASA-CASE-LEW-12989-1	c 37	N82-12442* #	NASA-CASE-MFS-14671	c 05	N71-12341* #	NASA-CASE-MFS-20890	c 14	N72-22439* #
NASA-CASE-LEW-12990-1	c 07	N81-29129* #	NASA-CASE-MFS-14685	c 31	N71-15689* #	NASA-CASE-MFS-20916	c 14	N73-25460* #
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NASA-CASE-LEW-12995-1	c 37	N80-26659* #	NASA-CASE-MFS-14711	c 15	N71-26185* #	NASA-CASE-MFS-20922	c 31	N72-20840* #
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NASA-CASE-LEW-13028-1	c 27	N82-33521* #	NASA-CASE-MFS-14772	c 15	N71-17692* #	NASA-CASE-MFS-20935	c 09	N71-34212* #
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NASA-CASE-LEW-13080-2	c 27	N82-11210* #	NASA-CASE-MFS-15063	c 14	N72-25412* #	NASA-CASE-MFS-20979-2	c 06	N73-20300* #
NASA-CASE-LEW-13088-1	c 26	N81-25188* #	NASA-CASE-MFS-15128-1	c 37	N77-19457* #	NASA-CASE-MFS-20979	c 06	N72-25151* #
NASA-CASE-LEW-13101-2	c 23	N81-29160* #	NASA-CASE-MFS-15670-1	c 33	N82-33634* #	NASA-CASE-MFS-20994-1	c 35	N73-30078* #
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NASA-CASE-LEW-13107-1	c 52	N81-27786* #	NASA-CASE-MFS-16609-3	c 03	N76-32140* #	NASA-CASE-MFS-21042	c 35	N75-15932* #
NASA-CASE-LEW-13120-1	c 27	N82-28440* #	NASA-CASE-MFS-18100	c 15	N72-11390* #	NASA-CASE-MFS-21046-1	c 14	N73-27377* #
NASA-CASE-LEW-13132-1	c 44	N81-27616* #	NASA-CASE-MFS-18495	c 15	N72-11385* #	NASA-CASE-MFS-21049-1	c 52	N74-27864* #
NASA-CASE-LEW-13135-2	c 27	N81-24257* #	NASA-CASE-MFS-19193-1	c 37	N75-19886* #	NASA-CASE-MFS-21077-1	c 24	N75-28135* #
NASA-CASE-LEW-13148-1	c 33	N80-20487* #	NASA-CASE-MFS-19194-1	c 37	N76-14460* #	NASA-CASE-MFS-21087-1	c 35	N74-17153* #
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NASA-CASE-LEW-13150-1	c 44	N79-26474* #	NASA-CASE-MFS-19259-1	c 36	N78-14380* #	NASA-CASE-MFS-21109-1	c 05	N74-12771* #
NASA-CASE-LEW-13169-1	c 26	N82-29415* #	NASA-CASE-MFS-19287-1	c 34	N77-30399* #	NASA-CASE-MFS-21115-1	c 54	N74-12779* #
NASA-CASE-LEW-13169-2	c 26	N82-30371* #	NASA-CASE-MFS-20011	c 18	N72-22566* #	NASA-CASE-MFS-21136-1	c 35	N74-18323* #
NASA-CASE-LEW-13171-1	c 44	N82-29708* #	NASA-CASE-MFS-20044	c 14	N71-28993* #	NASA-CASE-MFS-21163-1	c 54	N74-17853* #
NASA-CASE-LEW-13174-1	c 34	N81-12363* #	NASA-CASE-MFS-20068	c 07	N71-27191* #	NASA-CASE-MFS-21214-1	c 09	N73-30181* #
NASA-CASE-LEW-13199-1	c 07	N82-26293* #	NASA-CASE-MFS-20074	c 16	N71-15565* #	NASA-CASE-MFS-21233-1	c 38	N74-15395* #
NASA-CASE-LEW-13201-1	c 07	N81-14999* #	NASA-CASE-MFS-20075	c 09	N71-26133* #	NASA-CASE-MFS-21244-1	c 36	N75-15028* #
NASA-CASE-LEW-13226-1	c 27	N81-17260* #	NASA-CASE-MFS-20095	c 24	N72-11595* #	NASA-CASE-MFS-21309-1	c 37	N74-18125* #
NASA-CASE-LEW-13246-1	c 25	N81-26203* #	NASA-CASE-MFS-20096	c 14	N71-30026* #	NASA-CASE-MFS-21311-1	c 20	N76-21275* #
NASA-CASE-LEW-13268-1	c 27	N82-29453* #	NASA-CASE-MFS-20125	c 16	N72-13437* #	NASA-CASE-MFS-21362	c 11	N73-20267* #
NASA-CASE-LEW-13268-2	c 37	N82-26674* #	NASA-CASE-MFS-20130	c 28	N71-27585* #	NASA-CASE-MFS-21364-1	c 37	N74-18126* #
NASA-CASE-LEW-13269-1	c 27	N81-22190* #	NASA-CASE-MFS-20180	c 16	N72-12440* #	NASA-CASE-MFS-21372-1	c 74	N74-27866* #
NASA-CASE-LEW-13282-1	c 33	N82-24415* #	NASA-CASE-MFS-20207-1	c 09	N73-32107* #	NASA-CASE-MFS-21374-1	c 33	N74-12951* #
NASA-CASE-LEW-13286-1	c 44	N81-27597* #	NASA-CASE-MFS-20240	c 14	N71-26788* #	NASA-CASE-MFS-21394-1	c 34	N74-27744* #
NASA-CASE-LEW-13286-2	c 26	N82-26431* #	NASA-CASE-MFS-20242	c 14	N73-19421* #	NASA-CASE-MFS-21395-1	c 25	N74-26948* #
NASA-CASE-LEW-13339-1	c 26	N82-31505* #	NASA-CASE-MFS-20243	c 23	N73-13662* #	NASA-CASE-MFS-21415-1	c 52	N74-20728* #
NASA-CASE-LEW-13343-1	c 27	N82-28441* #	NASA-CASE-MFS-20249	c 15	N72-11386* #	NASA-CASE-MFS-21424-1	c 34	N74-27730* #
NASA-CASE-LEW-13349-1	c 44	N82-22673* #	NASA-CASE-MFS-20261	c 14	N71-27005* #	NASA-CASE-MFS-21433	c 09	N73-20232* #
NASA-CASE-LEW-13359-1	c 27	N81-24265* #	NASA-CASE-MFS-20284-1	c 52	N74-12778* #	NASA-CASE-MFS-21441-1	c 14	N73-30392* #
NASA-CASE-LEW-13400-1	c 44	N82-31764* #	NASA-CASE-MFS-20299	c 15	N72-11392* #	NASA-CASE-MFS-21455-1	c 35	N74-15146* #
NASA-CASE-LEW-13401-1	c 44	N82-29709* #	NASA-CASE-MFS-20317	c 15	N73-13463* #	NASA-CASE-MFS-21462-1	c 33	N74-14935* #
NASA-CASE-LEW-13401-2	c 44	N82-24717* #	NASA-CASE-MFS-20325	c 28	N71-27095* #	NASA-CASE-MFS-21465-1	c 10	N73-32145* #
NASA-CASE-LEW-13426-1	c 44	N82-31769* #	NASA-CASE-MFS-20332-2	c 05	N73-25125* #	NASA-CASE-MFS-21470-1	c 44	N74-19870* #
NASA-CASE-LEW-13429-1	c 33	N81-16384* #	NASA-CASE-MFS-20333	c 09	N71-13486* #	NASA-CASE-MFS-21481-1	c 37	N74-18127* #
NASA-CASE-LEW-13450-1	c 34	N82-25463* #	NASA-CASE-MFS-20335-1	c 35	N74-10415* #	NASA-CASE-MFS-21485-1	c 37	N74-25968* #
NASA-CASE-LEW-13495-1	c 33	N82-24432* #	NASA-CASE-MFS-20335	c 33	N71-25353* #	NASA-CASE-MFS-21488-1	c 14	N75-24794* #
NASA-CASE-LEW-13504-1	c 27	N81-27279* #	NASA-CASE-MFS-20385	c 09	N71-24904* #	NASA-CASE-MFS-21540-1	c 32	N74-19790* #
NASA-CASE-LEW-13526-1	c 26	N82-22347* #	NASA-CASE-MFS-20386	c 21	N71-19212* #	NASA-CASE-MFS-21556-1	c 35	N74-26945* #
NASA-CASE-LEW-13556-1	c 44	N81-27615* #	NASA-CASE-MFS-20395	c 15	N71-24903* #	NASA-CASE-MFS-21577-1	c 19	N74-29410* #
NASA-CASE-LEW-13570-1	c 33	N81-24348* #	NASA-CASE-MFS-20400	c 31	N71-18611* #	NASA-CASE-MFS-21606-1	c 37	N75-19685* #
NASA-CASE-LEW-13622-1	c 07	N82-26294* #	NASA-CASE-MFS-20407	c 09	N73-19235* #	NASA-CASE-MFS-21611-1	c 54	N75-12616* #
NASA-CASE-LEW-13639-1	c 27	N82-33522* #	NASA-CASE-MFS-20408	c 18	N73-12604* #	NASA-CASE-MFS-21616-1	c 33	N75-30429* #
NASA-CASE-LEW-13653-1	c 44	N82-22672* #	NASA-CASE-MFS-20410	c 15	N71-19214* #	NASA-CASE-MFS-21628-1	c 44	N75-32581* #
NASA-CASE-LEW-13826-1	c 24	N82-26385* #	NASA-CASE-MFS-20413	c 15	N72-21463* #	NASA-CASE-MFS-21628-2	c 44	N76-23675* #
NASA-CASE-LEW-23169-2	c 26	N81-16209* #	NASA-CASE-MFS-20418	c 14	N73-24473* #	NASA-CASE-MFS-21629	c 14	N72-22442* #
NASA-CASE-MFS-06074	c 15	N71-20393* #	NASA-CASE-MFS-20423	c 15	N72-11388* #	NASA-CASE-MFS-21660-1	c 35	N74-21017* #
NASA-CASE-MFS-07369	c 15	N71-20443* #	NASA-CASE-MFS-20433	c 15	N72-28496* #	NASA-CASE-MFS-21671-1	c 33	N74-22885* #
NASA-CASE-MFS-10068	c 10	N71-25139* #	NASA-CASE-MFS-20434	c 11	N72-25288* #	NASA-CASE-MFS-21672-1	c 74	N76-19935* #
NASA-CASE-MFS-10340	c 15	N71-17628* #	NASA-CASE-MFS-20453	c 15	N71-29133* #	NASA-CASE-MFS-21675-1	c 25	N74-33378* #
NASA-CASE-MFS-10412	c 12	N71-17578* #	NASA-CASE-MFS-20482	c 15	N72-22492* #	NASA-CASE-MFS-21680-1	c 18	N74-27397* #
NASA-CASE-MFS-10506	c 06	N73-30100* #	NASA-CASE-MFS-20485	c 14	N72-11365* #	NASA-CASE-MFS-21681-1	c 18	N74-27397* #
NASA-CASE-MFS-10507	c 06	N73-30101* #	NASA-CASE-MFS-20486-2	c 27	N74-17283* #	NASA-CASE-MFS-21698-1	c 33	N74-26732* #
NASA-CASE-MFS-10509	c 06	N73-30103* #	NASA-CASE-MFS-20506-1	c 35	N75-12273* #	NASA-CASE-MFS-21704-1	c 35	N75-25124* #
NASA-CASE-MFS-10512	c 06	N73-30099* #	NASA-CASE-MFS-20509	c 11	N72-17183* #	NASA-CASE-MFS-21728-1	c 35	N75-15931* #
NASA-CASE-MFS-10555	c 11	N71-19494* #	NASA-CASE-MFS-20523	c 14	N72-27412* #	NASA-CASE-MFS-21761-1	c 35	N74-26976* #
NASA-CASE-MFS-10946-1	c 31	N79-21226* #	NASA-CASE-MFS-20546-2	c 14	N73-30389* #	NASA-CASE-MFS-21846-1	c 37	N74-25423* #
NASA-CASE-MFS-11132	c 15	N71-17649* #	NASA-CASE-MFS-20586	c 15	N71-17686* #	NASA-CASE-MFS-21919-1	c 10	N75-26372* #
NASA-CASE-MFS-11133	c 31	N71-16222* #	NASA-CASE-MFS-20589	c 25	N72-32688* #	NASA-CASE-MFS-21931-1	c 37	N75-26372* #
NASA-CASE-MFS-11204	c 14	N71-29134* #	NASA-CASE-MFS-20596	c 14	N72-17324* #	NASA-CASE-MFS-22002-1	c 44	N76-16612* #
NASA-CASE-MFS-11279	c 16	N71-20400* #	NASA-CASE-MFS-20607-1	c 37	N76-19436* #	NASA-CASE-MFS-22022-1	c 37	N76-15460* #
NASA-CASE-MFS-11492	c 06	N73-30102* #	NASA-CASE-MFS-20619	c 28	N72-11708* #	NASA-CASE-MFS-22039-1	c 09	N75-12968* #
NASA-CASE-MFS-11497	c 28	N71-16224* #	NASA-CASE-MFS-20620	c 11	N72-27262* #	NASA-CASE-MFS-22040-1	c 35	N74-26946* #
NASA-CASE-MFS-11537	c 14	N71-20442* #	NASA-CASE-MFS-20642	c 14	N72-21407* #	NASA-CASE-MFS-22060-1	c 35	N75-29380* #
NASA-CASE-MFS-12750	c 27	N71-16223* #	NASA-CASE-MFS-20645-1	c 37	N74-23070* #	NASA-CASE-MFS-22073-1	c 33	N75-13139* #
NASA-CASE-MFS-12805	c 15	N71-17805* #	NASA-CASE-MFS-20658-1	c 14	N73-30386* #	NASA-CASE-MFS-22088-1	c 33	N75-15874* #
NASA-CASE-MFS-12806	c 14	N71-17588* #	NASA-CASE-MFS-20673	c 14	N73-20476* #	NASA-CASE-MFS-22102-1	c 54	N74-20725* #
NASA-CASE-MFS-12827	c 14	N71-17656* #	NASA-CASE-MFS-20675	c 26	N73-26751* #	NASA-CASE-MFS-22129-1	c 33	N75-18477* #
NASA-CASE-MFS-12915	c 11	N71-17600* #	NASA-CASE-MFS-20698-2	c 15	N73-19457* #	NASA-CASE-MFS-22133-1	c 33	N74-26977* #
NASA-CASE-MFS-13046	c 07	N71-19433* #	NASA-CASE-MFS-20698	c 15	N72-20446* #	NASA-CASE-MFS-22145-1	c 75	N75-13625* #
NASA-CASE-MFS-13130	c 10	N72-17173* #	NASA-CASE-MFS-20710	c 11	N72-23215* #	NASA-CASE-MFS-22145-2	c 75	N76-17951* #
NASA-CASE-MFS-13532	c 18	N72-17532* #	NASA-CASE-MFS-20730-1	c 39	N74-13131* #	NASA-CASE-MFS-22189-1	c 35	N75-19615* #
NASA-CASE-MFS-13686	c 15	N71-18132* #	NASA-CASE-MFS-20757	c 09	N72-28225* #	NASA-CASE-MFS-22208-1	c 33	N75-26244* #
NASA-CASE-MFS-13687-2	c 09	N72-22198* #	NASA-CASE-MFS-20760	c 14	N72-33377* #	NASA-CASE-MFS-22234-1	c 32	N79-10264* #
NASA-CASE-MFS-13687	c 09	N71-28691* #	NASA-CASE-MFS-20761-1	c 44	N74-27519* #	NASA-CASE-MFS-22283-1	c 37	N75-33395* #
NASA-CASE-MFS-13929	c 15	N71-27091* #	NASA-CASE-MFS-20767-1	c 38	N74-15130* #	NASA-CASE-MFS-22287-1	c 75	N76-14931* #
NASA-CASE-MFS-13994-1	c 06	N71-11240* #	NASA-CASE-MFS-20774	c 14	N73-19420* #	NASA-CASE-MFS-22323-1	c 37	N76-14463* #
NASA-CASE-MFS-13994-2	c 06	N72-25148* #	NASA-CASE-MFS-20775-1	c 31	N75-12161* #	NASA-CASE-MFS-22324-1	c 27	N75-27160* #
NASA-CASE-MFS-14017	c 14	N71-26627* #	NASA-CASE-MFS-20809	c 23	N73-13660* #	NASA-CASE-MFS-22343-1	c 33	N74-34638* #
NASA-CASE-MFS-14023	c 33	N71-25351* #	NASA-CASE-MFS-20823-1	c 16	N73-30476* #	NASA-CASE-MFS-22355-1	c 23	N76-15268* #
NASA-CASE-MFS-14114-2	c 09	N71-24807* #	NASA-CASE-MFS-20829	c 12	N72-21310* #	NASA-CASE-MFS-22356-1	c 23	N75-30256* #
NASA-CASE-MFS-14114	c 33	N71-27862* #	NASA-CASE-MFS-20830	c 15	N71-30028* #	NASA-CASE-MFS-22409-2	c 74	N78-15880* #
NASA-CASE-MFS-14216	c 14	N73-13418* #	NASA-CASE-MFS-20831	c 28	N71-29153* #	NASA-CASE-MFS-22411-1	c 37	N74-21058* #
NASA-CASE-MFS-14253	c 33	N71-24858* #	NASA-CASE-MFS-20855-1	c 15	N77-10112* #	NASA-CASE-MFS-22458-1	c 44	N77-10635* #
NASA-CASE-MFS-14259	c 15	N71-19213* #	NASA-CASE-MFS-20855	c 15	N73-27405* #	NASA-CASE-MFS-22517-1	c 35	N76-18402* #
NASA-CASE-MFS-14322	c 08	N71-18692* #						



NASA-CASE-MFS-22537-1	c 35	N75-27328* #	NASA-CASE-MFS-23846-1	c 37	N82-32731* #	NASA-CASE-MSC-12363-1	c 14	N73-26431* #
NASA-CASE-MFS-22560-1	c 33	N77-14335* #	NASA-CASE-MFS-23862-1	c 48	N80-18667* #	NASA-CASE-MSC-12372-1	c 31	N72-25842* #
NASA-CASE-MFS-22562-1	c 44	N76-14595* #	NASA-CASE-MFS-23883-1	c 51	N80-16715* #	NASA-CASE-MSC-12389	c 33	N71-29052* #
NASA-CASE-MFS-22597	c 36	N78-17366* #	NASA-CASE-MFS-23923-1	c 35	N81-19426* #	NASA-CASE-MSC-12390	c 27	N71-29155* #
NASA-CASE-MFS-22631-1	c 66	N76-19888* #	NASA-CASE-MFS-23981-1	c 33	N81-19394* #	NASA-CASE-MSC-12391	c 30	N73-12884* #
NASA-CASE-MFS-22636-1	c 37	N76-22540* #	NASA-CASE-MFS-23988-1	c 33	N81-27395* #	NASA-CASE-MSC-12393-1	c 02	N73-26006* #
NASA-CASE-MFS-22649-1	c 37	N75-25186* #	NASA-CASE-MFS-23999-1	c 44	N81-24520* #	NASA-CASE-MSC-12394-1	c 08	N74-10942* #
NASA-CASE-MFS-22671-1	c 35	N75-21582* #	NASA-CASE-MFS-24368-3	c 33	N81-22280* #	NASA-CASE-MSC-12395	c 09	N72-25257* #
NASA-CASE-MFS-22671-2	c 35	N77-17426* #	NASA-CASE-MFS-25000-1	c 25	N81-19242* #	NASA-CASE-MSC-12396-1	c 03	N73-31988* #
NASA-CASE-MFS-22707-1	c 37	N76-15457* #	NASA-CASE-MFS-25050-1	c 71	N81-15767* #	NASA-CASE-MSC-12397-1	c 05	N72-25119* #
NASA-CASE-MFS-22729-1	c 32	N76-21366* #	NASA-CASE-MFS-25134-1	c 31	N81-12283* #	NASA-CASE-MSC-12398	c 05	N72-20098* #
NASA-CASE-MFS-22734-1	c 18	N75-19329* #	NASA-CASE-MFS-25139-1	c 34	N82-13376* #	NASA-CASE-MSC-12404-1	c 23	N73-13661* #
NASA-CASE-MFS-22743-1	c 44	N76-22657* #	NASA-CASE-MFS-25181-1	c 27	N82-24340* #	NASA-CASE-MSC-12408-1	c 46	N74-13011* #
NASA-CASE-MFS-22744-1	c 44	N76-24696* #	NASA-CASE-MFS-25209-1	c 33	N81-31480* #	NASA-CASE-MSC-12411-1	c 05	N72-20096* #
NASA-CASE-MFS-22749-1	c 44	N76-14601* #	NASA-CASE-MFS-25211-1	c 33	N80-32651* #	NASA-CASE-MSC-12423-1	c 91	N76-30131* #
NASA-CASE-MFS-22758-1	c 70	N75-26789* #	NASA-CASE-MFS-25215-1	c 33	N81-34481* #	NASA-CASE-MSC-12428-1	c 10	N73-25240* #
NASA-CASE-MFS-22787-1	c 15	N77-10113* #	NASA-CASE-MFS-25242-1	c 35	N81-24413* #	NASA-CASE-MSC-12433	c 31	N73-14854* #
NASA-CASE-MFS-22805-1	c 19	N76-22284* #	NASA-CASE-MFS-25282-1	c 89	N81-34122* #	NASA-CASE-MSC-12458-1	c 08	N73-32081* #
NASA-CASE-MFS-22906-1	c 75	N78-27913* #	NASA-CASE-MFS-25287-1	c 44	N82-18686* #	NASA-CASE-MSC-12462-1	c 32	N74-20809* #
NASA-CASE-MFS-22907-1	c 26	N76-18257* #	NASA-CASE-MFS-25305-1	c 35	N81-16427* #	NASA-CASE-MSC-12494-1	c 32	N74-20810* #
NASA-CASE-MFS-22926-1	c 24	N77-27187* #	NASA-CASE-MFS-25306-1	c 25	N82-11147* #	NASA-CASE-MSC-12506-1	c 32	N77-12239* #
NASA-CASE-MFS-22938-1	c 34	N76-18374* #	NASA-CASE-MFS-25312-1	c 74	N80-34251* #	NASA-CASE-MSC-12531-1	c 35	N75-30504* #
NASA-CASE-MFS-22991-1	c 34	N77-10463* #	NASA-CASE-MFS-25315-1	c 36	N81-19440* #	NASA-CASE-MSC-12549-1	c 37	N74-27903* #
NASA-CASE-MFS-23001-1	c 76	N77-32919* #	NASA-CASE-MFS-25323-1	c 33	N82-12349* #	NASA-CASE-MSC-12559-1	c 18	N76-14186* #
NASA-CASE-MFS-23008-1	c 35	N78-18390* #	NASA-CASE-MFS-25363-1	c 37	N82-12441* #	NASA-CASE-MSC-12561-1	c 18	N76-17185* #
NASA-CASE-MFS-23047-1	c 37	N76-18454* #	NASA-CASE-MFS-25403-1	c 18	N81-24164* #	NASA-CASE-MSC-12568-1	c 24	N76-14204* #
NASA-CASE-MFS-23051-1	c 37	N79-10422* #	NASA-CASE-MFS-25405-1	c 35	N81-27459* #	NASA-CASE-MSC-12593-1	c 17	N76-21250* #
NASA-CASE-MFS-23052-2	c 74	N79-13855* #	NASA-CASE-MFS-25430-1	c 33	N82-28550* #	NASA-CASE-MSC-12607-1	c 32	N75-21485* #
NASA-CASE-MFS-23059-1	c 44	N76-27664* #	NASA-CASE-MFS-25436-1	c 76	N81-30012* #	NASA-CASE-MSC-12609-1	c 05	N73-32012* #
NASA-CASE-MFS-23062-1	c 37	N77-12402* #	NASA-CASE-MFS-25477-1	c 33	N82-22437* #	NASA-CASE-MSC-12611-1	c 12	N76-15189* #
NASA-CASE-MFS-23074-1	c 54	N77-21844* #	NASA-CASE-MFS-25509-1	c 34	N82-10359* #	NASA-CASE-MSC-12615-1	c 37	N76-19437* #
NASA-CASE-MFS-23088-1	c 37	N77-23483* #	NASA-CASE-MFS-25510-1	c 37	N82-11470* #	NASA-CASE-MSC-12617-1	c 35	N76-29552* #
NASA-CASE-MFS-23099-1	c 09	N76-23273* #	NASA-CASE-MFS-25535-1	c 33	N81-12330* #	NASA-CASE-MSC-12618-1	c 74	N78-17865* #
NASA-CASE-MFS-23114-1	c 38	N78-32447* #	NASA-CASE-MFS-25560-1	c 33	N82-30472* #	NASA-CASE-MSC-12619-2	c 27	N79-12221* #
NASA-CASE-MFS-23118-1	c 35	N77-31465* #	NASA-CASE-MFS-25586-1	c 33	N82-11360* #	NASA-CASE-MSC-12631-1	c 24	N77-28225* #
NASA-CASE-MFS-23175-1	c 44	N76-31687* #	NASA-CASE-MFS-25607-1	c 33	N82-26574* #	NASA-CASE-MSC-12631-3	c 27	N81-14077* #
NASA-CASE-MFS-23178-1	c 35	N77-10493* #	NASA-CASE-MFS-25616-1	c 33	N82-24428* #	NASA-CASE-MSC-12640-1	c 74	N76-13998* #
NASA-CASE-MFS-23181-1	c 33	N77-17351* #	NASA-CASE-MFS-25620-1	c 24	N82-11118* #	NASA-CASE-MSC-12662-1	c 33	N79-12331* #
NASA-CASE-MFS-23194-1	c 35	N78-17357* #	NASA-CASE-MFS-25631-1	c 34	N82-10360* #	NASA-CASE-MSC-12709-1	c 33	N77-24375* #
NASA-CASE-MFS-23225-1	c 52	N77-14735* #	NASA-CASE-MFS-25637-1	c 44	N82-26780* #	NASA-CASE-MSC-12731-1	c 37	N78-25426* #
NASA-CASE-MFS-23250-1	c 35	N82-11432* #	NASA-CASE-MFS-25640-1	c 52	N82-26962* #	NASA-CASE-MSC-12737-1	c 24	N79-25142* #
NASA-CASE-MFS-23267-1	c 35	N77-20401* #	NASA-CASE-MFS-25678-1	c 37	N82-25517* #	NASA-CASE-MSC-12743-1	c 32	N79-10263* #
NASA-CASE-MFS-23270-1	c 44	N78-25531* #	NASA-CASE-MFS-25707-1	c 35	N82-26631* #	NASA-CASE-MSC-12745-1	c 33	N81-27397* #
NASA-CASE-MFS-23274-1	c 33	N78-13320* #	NASA-CASE-MFS-25754-1	c 31	N82-26503* #	NASA-CASE-MSC-13047-1	c 31	N71-25434* #
NASA-CASE-MFS-23280-1	c 33	N78-10376* #	NASA-CASE-MFS-25837	c 16	N82-31398* #	NASA-CASE-MSC-13054	c 54	N78-17677* #
NASA-CASE-MFS-23281-1	c 35	N77-22450* #	NASA-CASE-MSC-10954-1	c 54	N78-18761* #	NASA-CASE-MSC-13110-1	c 08	N72-21637* #
NASA-CASE-MFS-23284-1	c 37	N80-14397* #	NASA-CASE-MSC-10959	c 15	N71-26243* #	NASA-CASE-MSC-13112	c 03	N71-11057* #
NASA-CASE-MFS-23299-1	c 39	N77-28511* #	NASA-CASE-MSC-10960-1	c 03	N71-24718* #	NASA-CASE-MSC-13140	c 05	N72-11085* #
NASA-CASE-MFS-23303-1	c 32	N77-18307* #	NASA-CASE-MSC-10966	c 14	N71-19568* #	NASA-CASE-MSC-13201-1	c 07	N71-28429* #
NASA-CASE-MFS-23311-1	c 54	N78-17676* #	NASA-CASE-MSC-11010	c 15	N71-19485* #	NASA-CASE-MSC-13276-1	c 14	N71-27058* #
NASA-CASE-MFS-23312-1	c 33	N78-27326* #	NASA-CASE-MSC-11072	c 54	N74-32546* #	NASA-CASE-MSC-13281	c 31	N72-18859* #
NASA-CASE-MFS-23315-1	c 76	N78-24950* #	NASA-CASE-MSC-11235	c 33	N78-17294* #	NASA-CASE-MSC-13282-1	c 05	N71-24729* #
NASA-CASE-MFS-23345-1	c 27	N77-30237* #	NASA-CASE-MSC-11242	c 35	N78-17358* #	NASA-CASE-MSC-13332-1	c 14	N72-21408* #
NASA-CASE-MFS-23349-1	c 44	N79-23481* #	NASA-CASE-MSC-11253	c 05	N71-12343* #	NASA-CASE-MSC-13335-1	c 06	N72-31140* #
NASA-CASE-MFS-23362-1	c 47	N77-10753* #	NASA-CASE-MSC-11277	c 09	N71-29008* #	NASA-CASE-MSC-13397-1	c 21	N72-25595* #
NASA-CASE-MFS-23363-1	c 35	N78-32396* #	NASA-CASE-MSC-11561-1	c 05	N73-32014* #	NASA-CASE-MSC-13407-1	c 10	N72-20225* #
NASA-CASE-MFS-23405-1	c 26	N77-29260* #	NASA-CASE-MSC-11817-1	c 15	N71-26611* #	NASA-CASE-MSC-13436-1	c 05	N73-32015* #
NASA-CASE-MFS-23447-1	c 37	N79-11404* #	NASA-CASE-MSC-11847-1	c 14	N72-11363* #	NASA-CASE-MSC-13492-1	c 10	N71-28860* #
NASA-CASE-MFS-23460-1	c 12	N79-26075* #	NASA-CASE-MSC-11849-1	c 15	N72-22488* #	NASA-CASE-MSC-13512-1	c 15	N72-22485* #
NASA-CASE-MFS-23461-1	c 35	N79-10389* #	NASA-CASE-MSC-12033-1	c 09	N71-13531* #	NASA-CASE-MSC-13530-2	c 23	N75-14834* #
NASA-CASE-MFS-23506-1	c 24	N78-24290* #	NASA-CASE-MSC-12049	c 31	N71-16080* #	NASA-CASE-MSC-13540-1	c 05	N72-33096* #
NASA-CASE-MFS-23513-1	c 74	N79-11865* #	NASA-CASE-MSC-12052-1	c 15	N71-24599* #	NASA-CASE-MSC-13587-1	c 15	N73-30459* #
NASA-CASE-MFS-23515-1	c 44	N80-21828* #	NASA-CASE-MSC-12084-1	c 12	N71-17569* #	NASA-CASE-MSC-13601-2	c 54	N75-27759* #
NASA-CASE-MFS-23518-1	c 44	N80-16452* #	NASA-CASE-MSC-12086-1	c 05	N71-12345* #	NASA-CASE-MSC-13604-1	c 05	N73-13114* #
NASA-CASE-MFS-23518-3	c 44	N79-26475* #	NASA-CASE-MSC-12101	c 09	N71-18720* #	NASA-CASE-MSC-13609-1	c 05	N72-25122* #
NASA-CASE-MFS-23540-1	c 76	N79-14906* #	NASA-CASE-MSC-12105-1	c 14	N72-21409* #	NASA-CASE-MSC-13648	c 05	N72-12103* #
NASA-CASE-MFS-23541-1	c 04	N76-26175* #	NASA-CASE-MSC-12109	c 18	N71-26285* #	NASA-CASE-MSC-13746-1	c 10	N73-32143* #
NASA-CASE-MFS-23564-1	c 15	N78-25119* #	NASA-CASE-MSC-12111-1	c 02	N71-11039* #	NASA-CASE-MSC-13789-1	c 11	N73-32152* #
NASA-CASE-MFS-23579-1	c 18	N79-11108* #	NASA-CASE-MSC-12116-1	c 15	N71-17648* #	NASA-CASE-MSC-13802-2	c 35	N76-15431* #
NASA-CASE-MFS-23620-1	c 37	N79-10421* #	NASA-CASE-MSC-12121-1	c 15	N71-27147* #	NASA-CASE-MSC-13855-1	c 35	N74-17885* #
NASA-CASE-MFS-23626-1	c 24	N80-26388* #	NASA-CASE-MSC-12135-1	c 09	N71-12526* #	NASA-CASE-MSC-13907-1	c 10	N73-26230* #
NASA-CASE-MFS-23642-1	c 20	N80-10278* #	NASA-CASE-MSC-12139-1	c 28	N71-14058* #	NASA-CASE-MSC-13912-1	c 32	N74-30524* #
NASA-CASE-MFS-23642-2	c 20	N78-27176* #	NASA-CASE-MSC-12143-1	c 33	N72-17947* #	NASA-CASE-MSC-13917-1	c 05	N72-15098* #
NASA-CASE-MFS-23646-1	c 37	N79-22474* #	NASA-CASE-MSC-12146-1	c 07	N72-17109* #	NASA-CASE-MSC-13932-1	c 62	N74-14920* #
NASA-CASE-MFS-23659-1	c 33	N79-17133* #	NASA-CASE-MSC-12165-1	c 07	N71-33696* #	NASA-CASE-MSC-13972-1	c 52	N74-10975* #
NASA-CASE-MFS-23674-1	c 24	N81-29163* #	NASA-CASE-MSC-12168-1	c 09	N71-18600* #	NASA-CASE-MSC-13999-1	c 52	N74-26626* #
NASA-CASE-MFS-23675-1	c 89	N79-10969* #	NASA-CASE-MSC-12178-1	c 09	N71-13518* #	NASA-CASE-MSC-14053-1	c 60	N74-12888* #
NASA-CASE-MFS-23696-1	c 54	N81-26718* #	NASA-CASE-MSC-12205-1	c 07	N71-27058* #	NASA-CASE-MSC-14065-1	c 32	N74-26654* #
NASA-CASE-MFS-23717-1	c 52	N81-25660* #	NASA-CASE-MSC-12206-1	c 05	N71-17599* #	NASA-CASE-MSC-14066-1	c 33	N74-27705* #
NASA-CASE-MFS-23720-1	c 43	N80-23711* #	NASA-CASE-MSC-12209	c 09	N71-24842* #	NASA-CASE-MSC-14070-1	c 32	N74-32598* #
NASA-CASE-MFS-23720-2	c 43	N80-14423* #	NASA-CASE-MSC-12223-1	c 07	N71-26181* #	NASA-CASE-MSC-14081-1	c 35	N74-27860* #
NASA-CASE-MFS-23720-3	c 43	N78-25443* #	NASA-CASE-MSC-12233-1	c 15	N72-25454* #	NASA-CASE-MSC-14082-1	c 60	N76-23850* #
NASA-CASE-MFS-23721-1	c 31	N79-28370* #	NASA-CASE-MSC-12239-1	c 32	N73-13921* #	NASA-CASE-MSC-14098-1	c 74	N74-15095* #
NASA-CASE-MFS-23725-1	c 43	N79-31708* #	NASA-CASE-MSC-12243-1	c 52	N79-21750* #	NASA-CASE-MSC-14129-1	c 33	N75-13479* #
NASA-CASE-MFS-23726-1	c 43	N79-26439* #	NASA-CASE-MSC-12259-1	c 05	N71-24728* #	NASA-CASE-MSC-14130-1	c 33	N74-32711* #
NASA-CASE-MFS-23727-1	c 44	N80-14473* #	NASA-CASE-MSC-12259-2	c 07	N70-12618* #	NASA-CASE-MSC-14131-1	c 33	N75-19515* #
NASA-CASE-MFS-23775-1	c 44	N82-16474* #	NASA-CASE-MSC-12279-1	c 07	N72-33146* #	NASA-CASE-MSC-14143-1	c 77	N75-20139* #
NASA-CASE-MFS-23776-1	c 33	N82-28545* #	NASA-CASE-MSC-12279	c 15	N70-35679* #	NASA-CASE-MSC-14180-1	c 52	N76-14757* #
NASA-CASE-MFS-23777-1	c 37	N80-32716* #	NASA-CASE-MSC-12280	c 15	N72-17450* #	NASA-CASE-MSC-14182-1	c 27	N76-14264* #
NASA-CASE-MFS-23816-1	c 26	N80-23419* #	NASA-CASE-MSC-12293-1	c 27	N71-16348* #	NASA-CASE-MSC-14187-1	c 35	N74-32879* #
NASA-CASE-MFS-23825-1	c 51	N81-32829* #	NASA-CASE-MSC-12297	c 14	N72-27411* #	NASA-CASE-MSC-14219-1	c 32	N74-27612* #
NASA-CASE-MFS-23828-1	c 33	N82-26569* #	NASA-CASE-MSC-12324-1	c 14	N72-23457* #	NASA-CASE-MSC-14240-1	c 33	N75-14957* #
NASA-CASE-MFS-23830-1	c 44	N82-24639* #	NASA-CASE-MSC-12327-1	c 05	N72-22093* #	NASA-CASE-MSC-14245-1	c 18	N75-27041* #
NASA-CASE-MFS-23845-1	c 33	N81-17348* #	NASA-CASE-MSC-12357	c 35	N77-27368* #	NASA-CASE-MSC-14270-1	c 27	N76-22377* #
				c 15	N73-12489* #	NASA-CASE-MSC-14270-2	c 27	N76-23426* #
						NASA-CASE-MSC-14273-1	c 34	N75-33342* #



NASA-CASE-MSC-14276-1	c 52	N77-14737* #	NASA-CASE-MSC-18794-1	c 37	N81-24445* #	NASA-CASE-NPO-10351	c 08	N71-12503* #
NASA-CASE-MSC-14331-1	c 27	N76-24405* #	NASA-CASE-MSC-18796-1	c 24	N82-26389* #	NASA-CASE-NPO-10373	c 03	N71-18698* #
NASA-CASE-MSC-14331-2	c 27	N78-17213* #	NASA-CASE-MSC-18807-1	c 37	N81-29442* #	NASA-CASE-NPO-10388	c 07	N71-24622* #
NASA-CASE-MSC-14331-3	c 27	N78-32262* #	NASA-CASE-MSC-18832-1	c 24	N82-26388* #	NASA-CASE-NPO-10401	c 03	N72-20033* #
NASA-CASE-MSC-14339-1	c 05	N75-24716* #	NASA-CASE-MSC-18851-1	c 27	N82-26460* #	NASA-CASE-NPO-10404	c 03	N71-12255* #
NASA-CASE-MSC-14428-1	c 23	N77-17161* #	NASA-CASE-MSC-18852-1	c 37	N82-26640* #	NASA-CASE-NPO-10412	c 09	N71-28421* #
NASA-CASE-MSC-14435-1	c 37	N76-18455* #	NASA-CASE-MSC-18866-1	c 35	N82-26634* #	NASA-CASE-NPO-10416	c 12	N71-27332* #
NASA-CASE-MSC-14472-1	c 43	N77-10584* #	NASA-CASE-MSC-18929-1	c 54	N81-15699* #	NASA-CASE-NPO-10417	c 16	N71-33410* #
NASA-CASE-MSC-14557-1	c 32	N76-16249* #	NASA-CASE-MSC-18934-2	c 24	N82-26387* #	NASA-CASE-NPO-10424-1	c 27	N81-24258* #
NASA-CASE-MSC-14558-1	c 32	N75-21486* #	NASA-CASE-MSC-18936-1	c 25	N82-22329* #	NASA-CASE-NPO-10431	c 15	N71-29132* #
NASA-CASE-MSC-14623-1	c 52	N77-28717* #	NASA-CASE-MSC-18969-1	c 15	N82-28318* #	NASA-CASE-NPO-10440	c 15	N72-21466* #
NASA-CASE-MSC-14632-1	c 54	N78-14784* #	NASA-CASE-MSC-18995-1	c 37	N75-19683* #	NASA-CASE-NPO-10447	c 06	N70-11252* #
NASA-CASE-MSC-14640-1	c 54	N76-14804* #	NASA-CASE-MSC-19372-1	c 39	N76-31562* #	NASA-CASE-NPO-10467	c 23	N71-26654* #
NASA-CASE-MSC-14649-1	c 33	N76-16331* #	NASA-CASE-MSC-19442-1	c 74	N77-10899* #	NASA-CASE-NPO-10468	c 23	N71-33229* #
NASA-CASE-MSC-14653-1	c 35	N77-19385* #	NASA-CASE-MSC-19514-1	c 37	N79-20377* #	NASA-CASE-NPO-10539	c 07	N71-11285* #
NASA-CASE-MSC-14683-1	c 74	N77-18893* #	NASA-CASE-MSC-19535-1	c 37	N77-32499* #	NASA-CASE-NPO-10542	c 09	N72-27228* #
NASA-CASE-MSC-14733-1	c 54	N76-24900* #	NASA-CASE-MSC-19536-1	c 37	N77-22482* #	NASA-CASE-NPO-10548	c 16	N71-24831* #
NASA-CASE-MSC-14735-1	c 54	N76-24900* #	NASA-CASE-MSC-19568-1	c 34	N78-25350* #	NASA-CASE-NPO-10556	c 14	N71-27185* #
NASA-CASE-MSC-14757-1	c 35	N78-10428* #	NASA-CASE-MSC-19666-1	c 37	N78-17383* #	NASA-CASE-NPO-10557	c 27	N78-17214* #
NASA-CASE-MSC-14771-1	c 54	N77-32722* #	NASA-CASE-MSC-19672-1	c 38	N79-14398* #	NASA-CASE-NPO-10560	c 08	N72-22166* #
NASA-CASE-MSC-14773-1	c 35	N78-12390* #	NASA-CASE-MSC-19693-1	c 26	N78-24333* #	NASA-CASE-NPO-10567	c 08	N71-24633* #
NASA-CASE-MSC-14805-1	c 54	N78-32720* #	NASA-CASE-MSC-19706-1	c 09	N78-31129* #	NASA-CASE-NPO-10575	c 03	N72-25019* #
NASA-CASE-MSC-14831-1	c 25	N78-10225* #	NASA-CASE-MSC-20078-1	c 52	N82-32971* #	NASA-CASE-NPO-10591	c 03	N72-22041* #
NASA-CASE-MSC-14836-1	c 52	N82-11770* #	NASA-CASE-MSC-20080-1	c 37	N82-31688* #	NASA-CASE-NPO-10595	c 10	N71-25917* #
NASA-CASE-MSC-14840-1	c 32	N77-24331* #	NASA-CASE-MSC-20112-1	c 37	N82-28641* #	NASA-CASE-NPO-10596	c 06	N71-25929* #
NASA-CASE-MSC-14903-1	c 27	N78-32256* #	NASA-CASE-MSC-20127-1	c 44	N82-32843* #	NASA-CASE-NPO-10606	c 15	N72-25451* #
NASA-CASE-MSC-14903-2	c 27	N80-10358* #	NASA-CASE-MSC-20181-1	c 33	N82-28549* #	NASA-CASE-NPO-10607	c 09	N71-27232* #
NASA-CASE-MSC-14903-3	c 27	N80-24438* #	NASA-CASE-MSC-20261-1	c 54	N82-32985* #	NASA-CASE-NPO-10617-1	c 35	N74-22095* #
NASA-CASE-MSC-14905-1	c 37	N77-28487* #	NASA-CASE-MSC-20261-2	c 54	N82-32986* #	NASA-CASE-NPO-10618-1	c 35	N77-21393* #
NASA-CASE-MSC-14916-1	c 33	N78-10375* #	NASA-CASE-MSC-20304-1	c 37	N82-31690* #	NASA-CASE-NPO-10625	c 09	N71-26182* #
NASA-CASE-MSC-14939-1	c 32	N79-11264* #	NASA-CASE-MSC-20319-1	c 37	N82-31689* #	NASA-CASE-NPO-10629	c 08	N72-18184* #
NASA-CASE-MSC-15158-1	c 14	N72-17325* #	NASA-CASE-MSC-90153-2	c 05	N72-25120* #	NASA-CASE-NPO-10633	c 03	N72-28025* #
NASA-CASE-MSC-15474-1	c 15	N71-26162* #	NASA-CASE-NPO-08835-1	c 27	N78-33228* #	NASA-CASE-NPO-10634	c 23	N72-25619* #
NASA-CASE-MSC-15567-1	c 33	N73-16918* #	NASA-CASE-NPO-10003	c 10	N71-26415* #	NASA-CASE-NPO-10636	c 08	N72-25210* #
NASA-CASE-MSC-15626-1	c 14	N72-25411* #	NASA-CASE-NPO-10034	c 15	N71-17685* #	NASA-CASE-NPO-10637	c 15	N72-12409* #
NASA-CASE-MSC-16000-1	c 37	N78-24544* #	NASA-CASE-NPO-10037	c 09	N71-19610* #	NASA-CASE-NPO-10646	c 15	N71-28467* #
NASA-CASE-MSC-16043-1	c 37	N79-11402* #	NASA-CASE-NPO-10046	c 28	N72-17843* #	NASA-CASE-NPO-10649	c 07	N71-24840* #
NASA-CASE-MSC-16074-1	c 27	N80-26446* #	NASA-CASE-NPO-10051	c 18	N71-24934* #	NASA-CASE-NPO-10671	c 15	N72-20443* #
NASA-CASE-MSC-16098-1	c 51	N79-10693* #	NASA-CASE-NPO-10064	c 15	N71-17693* #	NASA-CASE-NPO-10677	c 05	N72-11084* #
NASA-CASE-MSC-16170-2	c 32	N81-16338* #	NASA-CASE-NPO-10066	c 09	N71-18598* #	NASA-CASE-NPO-10679	c 15	N72-21462* #
NASA-CASE-MSC-16182-1	c 54	N80-10799* #	NASA-CASE-NPO-10068	c 08	N71-19288* #	NASA-CASE-NPO-10680	c 31	N73-14855* #
NASA-CASE-MSC-16217-1	c 31	N81-27323* #	NASA-CASE-NPO-10070	c 15	N71-27372* #	NASA-CASE-NPO-10682	c 15	N70-34699* #
NASA-CASE-MSC-16239-1	c 37	N81-32510* #	NASA-CASE-NPO-10096	c 07	N71-24583* #	NASA-CASE-NPO-10691	c 14	N71-26199* #
NASA-CASE-MSC-16253-1	c 32	N79-20297* #	NASA-CASE-NPO-10109	c 03	N71-11049* #	NASA-CASE-NPO-10694	c 09	N72-20200* #
NASA-CASE-MSC-16258-1	c 45	N79-12584* #	NASA-CASE-NPO-10112	c 08	N71-12502* #	NASA-CASE-NPO-10700	c 07	N71-33613* #
NASA-CASE-MSC-16260-1	c 51	N80-16714* #	NASA-CASE-NPO-10117	c 15	N71-15608* #	NASA-CASE-NPO-10701	c 06	N71-28620* #
NASA-CASE-MSC-16270-1	c 37	N78-27423* #	NASA-CASE-NPO-10118	c 07	N71-24741* #	NASA-CASE-NPO-10704	c 15	N72-20445* #
NASA-CASE-MSC-16366-1	c 24	N79-23142* #	NASA-CASE-NPO-10122	c 12	N71-17631* #	NASA-CASE-NPO-10711-1	c 35	N77-21392* #
NASA-CASE-MSC-16370-1	c 35	N81-19427* #	NASA-CASE-NPO-10123	c 15	N71-24835* #	NASA-CASE-NPO-10714	c 06	N69-31244* #
NASA-CASE-MSC-16394-1	c 28	N81-24280* #	NASA-CASE-NPO-10138	c 33	N71-16357* #	NASA-CASE-NPO-10716	c 09	N71-24892* #
NASA-CASE-MSC-16433-1	c 52	N78-27750* #	NASA-CASE-NPO-10140	c 07	N71-24742* #	NASA-CASE-NPO-10721	c 15	N72-27484* #
NASA-CASE-MSC-16433-1	c 52	N81-24711* #	NASA-CASE-NPO-10141	c 11	N71-24964* #	NASA-CASE-NPO-10722	c 09	N72-20199* #
NASA-CASE-MSC-16461-1	c 33	N79-11313* #	NASA-CASE-NPO-10143	c 10	N71-26326* #	NASA-CASE-NPO-10737	c 28	N72-11709* #
NASA-CASE-MSC-16462-1	c 32	N82-31583* #	NASA-CASE-NPO-10144	c 14	N71-17701* #	NASA-CASE-NPO-10743	c 08	N72-21199* #
NASA-CASE-MSC-16497-1	c 25	N82-12166* #	NASA-CASE-NPO-10150	c 08	N71-24650* #	NASA-CASE-NPO-10745	c 08	N72-22164* #
NASA-CASE-MSC-16697-1	c 33	N79-28415* #	NASA-CASE-NPO-10151	c 37	N78-17386* #	NASA-CASE-NPO-10747	c 03	N72-22042* #
NASA-CASE-MSC-16747-1	c 33	N81-17349* #	NASA-CASE-NPO-10158	c 33	N71-16356* #	NASA-CASE-NPO-10748	c 08	N72-20177* #
NASA-CASE-MSC-16777-1	c 51	N80-27067* #	NASA-CASE-NPO-10166-1	c 07	N73-22076* #	NASA-CASE-NPO-10753	c 03	N72-26031* #
NASA-CASE-MSC-16800-1	c 32	N81-14187* #	NASA-CASE-NPO-10166-2	c 35	N76-16391* #	NASA-CASE-NPO-10755	c 15	N71-27084* #
NASA-CASE-MSC-16841-1	c 34	N79-24285* #	NASA-CASE-NPO-10169	c 10	N71-24844* #	NASA-CASE-NPO-10758	c 14	N73-14427* #
NASA-CASE-MSC-16938-1	c 37	N80-23653* #	NASA-CASE-NPO-10173	c 15	N71-24696* #	NASA-CASE-NPO-10760	c 09	N72-25254* #
NASA-CASE-MSC-16973-1	c 37	N81-14317* #	NASA-CASE-NPO-10174	c 14	N71-18465* #	NASA-CASE-NPO-10764-1	c 14	N73-14428* #
NASA-CASE-MSC-17832-1	c 33	N74-14958* #	NASA-CASE-NPO-10175	c 14	N71-18625* #	NASA-CASE-NPO-10764-2	c 35	N75-25122* #
NASA-CASE-MSC-18035-1	c 32	N81-15179* #	NASA-CASE-NPO-10185	c 10	N71-26339* #	NASA-CASE-NPO-10765	c 06	N72-20121* #
NASA-CASE-MSC-18106-1	c 33	N82-11357* #	NASA-CASE-NPO-10188	c 03	N71-20273* #	NASA-CASE-NPO-10767-1	c 06	N73-33076* #
NASA-CASE-MSC-18107-1	c 27	N81-25209* #	NASA-CASE-NPO-10189-1	c 33	N77-21314* #	NASA-CASE-NPO-10767-2	c 06	N72-27151* #
NASA-CASE-MSC-18134-1	c 37	N81-15363* #	NASA-CASE-NPO-10194	c 03	N71-20407* #	NASA-CASE-NPO-10768-2	c 06	N72-27144* #
NASA-CASE-MSC-18172-1	c 26	N80-19237* #	NASA-CASE-NPO-10198	c 09	N71-24806* #	NASA-CASE-NPO-10768	c 06	N71-27254* #
NASA-CASE-MSC-18179-1	c 20	N80-18097* #	NASA-CASE-NPO-10199	c 09	N72-17156* #	NASA-CASE-NPO-10769	c 08	N72-11171* #
NASA-CASE-MSC-18223-1	c 24	N82-29362* #	NASA-CASE-NPO-10201	c 08	N71-18694* #	NASA-CASE-NPO-10774	c 06	N72-17095* #
NASA-CASE-MSC-18223-2	c 52	N82-26960* #	NASA-CASE-NPO-10214	c 10	N71-26577* #	NASA-CASE-NPO-10778	c 14	N72-11364* #
NASA-CASE-MSC-18255-1	c 74	N80-33210* #	NASA-CASE-NPO-10230	c 09	N71-12520* #	NASA-CASE-NPO-10781-1	c 33	N77-21314* #
NASA-CASE-MSC-18334-1	c 32	N80-32604* #	NASA-CASE-NPO-10231	c 07	N71-26101* #	NASA-CASE-NPO-10790-1	c 33	N77-21316* #
NASA-CASE-MSC-18381-1	c 52	N81-28740* #	NASA-CASE-NPO-10233-1	c 74	N78-33913* #	NASA-CASE-NPO-10796	c 15	N71-27068* #
NASA-CASE-MSC-18382-1	c 27	N82-16238* #	NASA-CASE-NPO-10234	c 06	N72-17094* #	NASA-CASE-NPO-10808	c 15	N71-27432* #
NASA-CASE-MSC-18382-2	c 27	N82-24344* #	NASA-CASE-NPO-10242	c 09	N71-24803* #	NASA-CASE-NPO-10810	c 14	N71-27323* #
NASA-CASE-MSC-18407-1	c 33	N82-24427* #	NASA-CASE-NPO-10244	c 15	N72-26371* #	NASA-CASE-NPO-10812	c 15	N73-13464* #
NASA-CASE-MSC-18422-1	c 37	N82-16408* #	NASA-CASE-NPO-10250	c 23	N71-16212* #	NASA-CASE-NPO-10817-1	c 08	N73-30135* #
NASA-CASE-MSC-18430-1	c 37	N82-24491* #	NASA-CASE-NPO-10251	c 10	N71-27365* #	NASA-CASE-NPO-10821	c 03	N71-19545* #
NASA-CASE-MSC-18498-1	c 60	N82-29013* #	NASA-CASE-NPO-10271	c 17	N71-16393* #	NASA-CASE-NPO-10828	c 33	N72-17948* #
NASA-CASE-MSC-18526-1	c 37	N82-24494* #	NASA-CASE-NPO-10298	c 12	N71-17661* #	NASA-CASE-NPO-10830-1	c 27	N81-15104* #
NASA-CASE-MSC-18532-1	c 32	N82-27558* #	NASA-CASE-NPO-10300	c 14	N71-17662* #	NASA-CASE-NPO-10831	c 33	N72-20915* #
NASA-CASE-MSC-18538-1	c 37	N82-26672* #	NASA-CASE-NPO-10301	c 07	N72-11148* #	NASA-CASE-NPO-10832	c 14	N72-21405* #
NASA-CASE-MSC-18578-1	c 74	N82-27121* #	NASA-CASE-NPO-10302	c 10	N71-26142* #	NASA-CASE-NPO-10844	c 07	N72-20140* #
NASA-CASE-MSC-18606-1	c 32	N82-11336* #	NASA-CASE-NPO-10303	c 07	N72-22127* #	NASA-CASE-NPO-10851	c 07	N71-24613* #
NASA-CASE-MSC-18627-1	c 74	N82-30071* #	NASA-CASE-NPO-10309	c 15	N69-23190* #	NASA-CASE-NPO-10857-1	c 33	N80-14330* #
NASA-CASE-MSC-18674-1	c 74	N81-24907* #	NASA-CASE-NPO-10311	c 31	N71-15643* #	NASA-CASE-NPO-10862	c 06	N72-22107* #
NASA-CASE-MSC-18675-1	c 32	N81-29312* #	NASA-CASE-NPO-10316-1	c 37	N77-22479* #	NASA-CASE-NPO-10863-2	c 06	N72-25152* #
NASA-CASE-MSC-18723-1	c 39	N81-24470* #	NASA-CASE-NPO-10320	c 14	N71-17655* #	NASA-CASE-NPO-10863	c 06	N70-11251* #
NASA-CASE-MSC-18736-1	c 27	N81-29231* #	NASA-CASE-NPO-10331	c 09	N71-26701* #	NASA-CASE-NPO-10866-1	c 28	N79-14228* #
NASA-CASE-MSC-18737-1	c 25	N81-29180* #	NASA-CASE-NPO-10337	c 14	N71-15604* #	NASA-CASE-NPO-10870-1	c 33	N77-22388* #
NASA-CASE-MSC-18741-1	c 27	N82-29456* #	NASA-CASE-NPO-10342	c 10	N71-33407* #	NASA-CASE-NPO-10872-1	c 35	N79-16248* #
NASA-CASE-MSC-18742-1	c 37	N82-26673* #	NASA-CASE-NPO-10343	c 07	N71-27341* #	NASA-CASE-NPO-10883	c 31	N72-22874* #
NASA-CASE-MSC-18759-1	c 52	N81-24718* #	NASA-CASE-NPO-10344	c 10	N71-26544* #	NASA-CASE-NPO-10890	c 11	N73-12285* #
NASA-CASE-MSC-18761-1	c 52	N81-24717* #	NASA-CASE-NPO-10348	c 10	N71-12554* #	NASA-CASE-NPO-10893	c 27	N73-22710* #
NASA-CASE-MSC-18791-1	c 37	N81-24446* #				NASA-CASE-NPO-10895	c 14	N73-20478* #



NASA-CASE-NPO-10998-1	c 06	N73-32029* #	NASA-CASE-NPO-11572	c 07	N73-16121* #	NASA-CASE-NPO-13205-1	c 31	N74-32917* #
NASA-CASE-NPO-10999-1	c 06	N73-32029* #	NASA-CASE-NPO-11575-1	c 74	N81-19896* #	NASA-CASE-NPO-13214-1	c 35	N75-25123* #
NASA-CASE-NPO-11001	c 07	N72-21118* #	NASA-CASE-NPO-11593-1	c 07	N73-28012* #	NASA-CASE-NPO-13215-1	c 35	N75-25123* #
NASA-CASE-NPO-11002	c 14	N72-22441* #	NASA-CASE-NPO-11609-2	c 27	N77-31308* #	NASA-CASE-NPO-13217-1	c 32	N75-26194* #
NASA-CASE-NPO-11012	c 15	N72-11391* #	NASA-CASE-NPO-11623-1	c 71	N74-31148* #	NASA-CASE-NPO-13231-1	c 45	N75-27585* #
NASA-CASE-NPO-11013	c 11	N72-22247* #	NASA-CASE-NPO-11628-1	c 07	N73-30113* #	NASA-CASE-NPO-13237-1	c 44	N76-18641* #
NASA-CASE-NPO-11016	c 08	N72-31226* #	NASA-CASE-NPO-11630	c 08	N72-33172* #	NASA-CASE-NPO-13247-1	c 76	N79-16678* #
NASA-CASE-NPO-11018	c 08	N72-21200* #	NASA-CASE-NPO-11631	c 10	N73-12244* #	NASA-CASE-NPO-13253-1	c 37	N75-18573* #
NASA-CASE-NPO-11021	c 03	N72-20032* #	NASA-CASE-NPO-11659-1	c 35	N74-11283* #	NASA-CASE-NPO-13263-1	c 12	N75-24774* #
NASA-CASE-NPO-11023	c 09	N72-17155* #	NASA-CASE-NPO-11661	c 07	N73-14130* #	NASA-CASE-NPO-13274-1	c 25	N79-10163* #
NASA-CASE-NPO-11031	c 07	N71-33606* #	NASA-CASE-NPO-11682-1	c 35	N74-15127* #	NASA-CASE-NPO-13281-1	c 37	N75-13266* #
NASA-CASE-NPO-11036	c 15	N72-24522* #	NASA-CASE-NPO-11686	c 14	N73-25462* #	NASA-CASE-NPO-13282	c 38	N78-17396* #
NASA-CASE-NPO-11059	c 15	N72-17454* #	NASA-CASE-NPO-11703-1	c 10	N73-32144* #	NASA-CASE-NPO-13283	c 38	N78-17395* #
NASA-CASE-NPO-11064	c 07	N72-11150* #	NASA-CASE-NPO-11707	c 07	N73-25161* #	NASA-CASE-NPO-13292-1	c 32	N75-15854* #
NASA-CASE-NPO-11078	c 09	N72-25262* #	NASA-CASE-NPO-11738-1	c 09	N73-30185* #	NASA-CASE-NPO-13303-1	c 20	N75-24837* #
NASA-CASE-NPO-11082	c 08	N72-22167* #	NASA-CASE-NPO-11743-1	c 28	N74-27425* #	NASA-CASE-NPO-13308-1	c 36	N75-30524* #
NASA-CASE-NPO-11087	c 23	N71-29125* #	NASA-CASE-NPO-11749	c 14	N73-28486* #	NASA-CASE-NPO-13309-1	c 25	N81-19244* #
NASA-CASE-NPO-11088	c 08	N71-29034* #	NASA-CASE-NPO-11751	c 07	N73-24176* #	NASA-CASE-NPO-13313-1	c 54	N75-27761* #
NASA-CASE-NPO-11091	c 18	N72-22567* #	NASA-CASE-NPO-11758-1	c 31	N74-23065* #	NASA-CASE-NPO-13321-1	c 32	N75-26195* #
NASA-CASE-NPO-11095	c 15	N72-25455* #	NASA-CASE-NPO-11771	c 03	N73-20040* #	NASA-CASE-NPO-13327-1	c 35	N75-23910* #
NASA-CASE-NPO-11103-1	c 35	N77-27367* #	NASA-CASE-NPO-11775	c 26	N72-28761* #	NASA-CASE-NPO-13342-1	c 37	N76-16446* #
NASA-CASE-NPO-11104	c 08	N72-22165* #	NASA-CASE-NPO-11806-1	c 44	N74-19693* #	NASA-CASE-NPO-13342-2	c 44	N76-29700* #
NASA-CASE-NPO-11106	c 14	N70-34697* #	NASA-CASE-NPO-11820-1	c 32	N74-19788* #	NASA-CASE-NPO-13345-1	c 37	N75-19684* #
NASA-CASE-NPO-11118	c 03	N72-25021* #	NASA-CASE-NPO-11821-1	c 08	N73-26175* #	NASA-CASE-NPO-13346-1	c 36	N76-29575* #
NASA-CASE-NPO-11120-1	c 34	N74-18552* #	NASA-CASE-NPO-11850-1	c 32	N74-12912* #	NASA-CASE-NPO-13348-1	c 33	N75-31332* #
NASA-CASE-NPO-11129	c 09	N72-33204* #	NASA-CASE-NPO-11856-1	c 36	N74-15145* #	NASA-CASE-NPO-13360-1	c 37	N75-25185* #
NASA-CASE-NPO-11130	c 08	N72-20176* #	NASA-CASE-NPO-11861-1	c 36	N74-20009* #	NASA-CASE-NPO-13374-1	c 33	N75-19524* #
NASA-CASE-NPO-11133	c 10	N72-20223* #	NASA-CASE-NPO-11868	c 10	N73-20254* #	NASA-CASE-NPO-13385-1	c 33	N76-18345* #
NASA-CASE-NPO-11134	c 09	N72-21246* #	NASA-CASE-NPO-11880	c 28	N73-24783* #	NASA-CASE-NPO-13388-1	c 54	N75-27758* #
NASA-CASE-NPO-11138	c 03	N70-34646* #	NASA-CASE-NPO-11905-1	c 33	N74-12887* #	NASA-CASE-NPO-13391-1	c 35	N76-16390* #
NASA-CASE-NPO-11140	c 15	N72-17455* #	NASA-CASE-NPO-11919-1	c 35	N74-11284* #	NASA-CASE-NPO-13396-1	c 34	N76-27515* #
NASA-CASE-NPO-11147	c 14	N72-27408* #	NASA-CASE-NPO-11921-1	c 32	N74-30523* #	NASA-CASE-NPO-13399-1	c 35	N76-18401* #
NASA-CASE-NPO-11150	c 35	N78-17359* #	NASA-CASE-NPO-11932-1	c 35	N74-23040* #	NASA-CASE-NPO-13402-1	c 37	N76-18457* #
NASA-CASE-NPO-11156-2	c 33	N75-31331* #	NASA-CASE-NPO-11941-1	c 10	N73-27171* #	NASA-CASE-NPO-13422-1	c 60	N76-14818* #
NASA-CASE-NPO-11161	c 08	N72-25207* #	NASA-CASE-NPO-11942-1	c 33	N73-32818* #	NASA-CASE-NPO-13423-1	c 33	N75-31329* #
NASA-CASE-NPO-11177	c 15	N72-17453* #	NASA-CASE-NPO-11945-1	c 33	N73-32818* #	NASA-CASE-NPO-13426-1	c 33	N75-31330* #
NASA-CASE-NPO-11190	c 03	N71-34044* #	NASA-CASE-NPO-11948-1	c 36	N76-18427* #	NASA-CASE-NPO-13428-1	c 60	N77-12721* #
NASA-CASE-NPO-11191-1	c 33	N77-22386* #	NASA-CASE-NPO-11951-1	c 33	N74-32712* #	NASA-CASE-NPO-13435-1	c 31	N76-14284* #
NASA-CASE-NPO-11194	c 08	N72-25209* #	NASA-CASE-NPO-11954-1	c 37	N74-21065* #	NASA-CASE-NPO-13436-1	c 37	N76-20480* #
NASA-CASE-NPO-11201	c 14	N72-27409* #	NASA-CASE-NPO-11961-1	c 35	N78-29421* #	NASA-CASE-NPO-13443-1	c 76	N76-20994* #
NASA-CASE-NPO-11202	c 15	N72-25450* #	NASA-CASE-NPO-11962-1	c 44	N76-18643* #	NASA-CASE-NPO-13447-1	c 60	N77-12721* #
NASA-CASE-NPO-11203	c 10	N72-20224* #	NASA-CASE-NPO-11975-1	c 33	N74-10194* #	NASA-CASE-NPO-13449-1	c 36	N75-32441* #
NASA-CASE-NPO-11210	c 11	N72-20244* #	NASA-CASE-NPO-11978	c 33	N74-19288* #	NASA-CASE-NPO-13451-1	c 33	N76-14373* #
NASA-CASE-NPO-11213	c 15	N73-20514* #	NASA-CASE-NPO-12000	c 28	N74-33209* #	NASA-CASE-NPO-13459-1	c 31	N77-10229* #
NASA-CASE-NPO-11222	c 15	N72-25456* #	NASA-CASE-NPO-12015	c 31	N78-17238* #	NASA-CASE-NPO-13462-1	c 35	N76-24524* #
NASA-CASE-NPO-11239	c 14	N73-12446* #	NASA-CASE-NPO-12061-1	c 27	N72-25699* #	NASA-CASE-NPO-13464-1	c 44	N76-18642* #
NASA-CASE-NPO-11243	c 07	N72-20154* #	NASA-CASE-NPO-12070-1	c 27	N73-16764* #	NASA-CASE-NPO-13464-2	c 44	N76-29704* #
NASA-CASE-NPO-11253	c 09	N72-17157* #	NASA-CASE-NPO-12072	c 27	N76-16228* #	NASA-CASE-NPO-13474-1	c 32	N76-31372* #
NASA-CASE-NPO-11264	c 07	N72-25174* #	NASA-CASE-NPO-12087-1	c 28	N73-32606* #	NASA-CASE-NPO-13479-1	c 45	N76-21742* #
NASA-CASE-NPO-11282	c 10	N73-16205* #	NASA-CASE-NPO-12106	c 28	N72-22772* #	NASA-CASE-NPO-13482-1	c 35	N77-10492* #
NASA-CASE-NPO-11283	c 09	N72-25260* #	NASA-CASE-NPO-12107	c 74	N81-19898* #	NASA-CASE-NPO-13490-1	c 44	N78-13526* #
NASA-CASE-NPO-11291-1	c 14	N73-30388* #	NASA-CASE-NPO-12109	c 09	N73-15235* #	NASA-CASE-NPO-13497-1	c 36	N76-31512* #
NASA-CASE-NPO-11302-1	c 07	N73-13149* #	NASA-CASE-NPO-12119-1	c 08	N71-27255* #	NASA-CASE-NPO-13504-1	c 44	N76-14602* #
NASA-CASE-NPO-11302-2	c 32	N74-10132* #	NASA-CASE-NPO-12122-1	c 11	N72-22245* #	NASA-CASE-NPO-13506-1	c 33	N75-30430* #
NASA-CASE-NPO-11304	c 14	N73-26430* #	NASA-CASE-NPO-12127-1	c 52	N75-15270* #	NASA-CASE-NPO-13510-1	c 35	N76-15435* #
NASA-CASE-NPO-11307-1	c 10	N73-30205* #	NASA-CASE-NPO-12128-1	c 24	N76-14203* #	NASA-CASE-NPO-13512-1	c 44	N77-32581* #
NASA-CASE-NPO-11311	c 14	N72-25414* #	NASA-CASE-NPO-12130-1	c 91	N74-13130* #	NASA-CASE-NPO-13519-1	c 33	N77-10428* #
NASA-CASE-NPO-11317-2	c 36	N74-13205* #	NASA-CASE-NPO-12131-3	c 14	N73-32317* #	NASA-CASE-NPO-13521-1	c 33	N76-19338* #
NASA-CASE-NPO-11322	c 06	N72-25146* #	NASA-CASE-NPO-12142-1	c 25	N75-14844* #	NASA-CASE-NPO-13528-1	c 09	N77-10071* #
NASA-CASE-NPO-11330	c 33	N73-26958* #	NASA-CASE-NPO-12148-1	c 37	N80-18400* #	NASA-CASE-NPO-13530-1	c 25	N81-17187* #
NASA-CASE-NPO-11333	c 08	N72-22162* #	NASA-CASE-NPO-12149-1	c 33	N76-31409* #	NASA-CASE-NPO-13531-1	c 36	N76-24553* #
NASA-CASE-NPO-11336-1	c 76	N79-16678* #	NASA-CASE-NPO-12154-1	c 38	N76-28563* #	NASA-CASE-NPO-13535-1	c 37	N76-31524* #
NASA-CASE-NPO-11337-1	c 74	N81-19896* #	NASA-CASE-NPO-12158-1	c 44	N78-27515* #	NASA-CASE-NPO-13540-1	c 35	N77-14409* #
NASA-CASE-NPO-11338	c 08	N72-25208* #	NASA-CASE-NPO-12181-1	c 35	N74-15094* #	NASA-CASE-NPO-13541-1	c 37	N79-14383* #
NASA-CASE-NPO-11340	c 15	N72-33477* #	NASA-CASE-NPO-12182-1	c 36	N75-15029* #	NASA-CASE-NPO-13543-1	c 32	N77-12240* #
NASA-CASE-NPO-11342	c 09	N72-25248* #	NASA-CASE-NPO-12193-1	c 37	N77-22480* #	NASA-CASE-NPO-13544-1	c 36	N76-18428* #
NASA-CASE-NPO-11358	c 07	N72-25172* #	NASA-CASE-NPO-12194-1	c 37	N76-20480* #	NASA-CASE-NPO-13545-1	c 32	N77-12240* #
NASA-CASE-NPO-11361	c 07	N72-32169* #	NASA-CASE-NPO-12195-1	c 25	N76-18245* #	NASA-CASE-NPO-13550-1	c 36	N77-26477* #
NASA-CASE-NPO-11366	c 11	N73-26238* #	NASA-CASE-NPO-12196-1	c 33	N79-11314* #	NASA-CASE-NPO-13553-1	c 33	N76-32457* #
NASA-CASE-NPO-11369	c 15	N73-13467* #	NASA-CASE-NPO-12197-1	c 52	N74-26625* #	NASA-CASE-NPO-13559-1	c 44	N77-10636* #
NASA-CASE-NPO-11371	c 08	N73-12177* #	NASA-CASE-NPO-12198-1	c 60	N76-18800* #	NASA-CASE-NPO-13561-1	c 44	N77-10636* #
NASA-CASE-NPO-11373	c 13	N72-25323* #	NASA-CASE-NPO-12199-1	c 33	N74-22814* #	NASA-CASE-NPO-13566-1	c 25	N77-32255* #
NASA-CASE-NPO-11377	c 15	N73-27406* #	NASA-CASE-NPO-12200-1	c 15	N73-12495* #	NASA-CASE-NPO-13567-1	c 44	N76-29701* #
NASA-CASE-NPO-11387	c 14	N73-14429* #	NASA-CASE-NPO-12201-1	c 44	N76-31666* #	NASA-CASE-NPO-13568-1	c 32	N76-21365* #
NASA-CASE-NPO-11388	c 03	N72-23048* #	NASA-CASE-NPO-12202-1	c 09	N73-12214* #	NASA-CASE-NPO-13569-2	c 35	N79-14348* #
NASA-CASE-NPO-11403-1	c 33	N77-22386* #	NASA-CASE-NPO-12203-1	c 37	N77-22480* #	NASA-CASE-NPO-13579-1	c 44	N78-17460* #
NASA-CASE-NPO-11406	c 08	N73-12175* #	NASA-CASE-NPO-12204-1	c 32	N74-20811* #	NASA-CASE-NPO-13579-2	c 44	N79-24433* #
NASA-CASE-NPO-11417	c 15	N73-24513* #	NASA-CASE-NPO-12205-1	c 37	N74-21060* #	NASA-CASE-NPO-13579-3	c 44	N79-24432* #
NASA-CASE-NPO-11418-1	c 14	N73-13420* #	NASA-CASE-NPO-12206-1	c 73	N74-26767* #	NASA-CASE-NPO-13579-4	c 44	N79-14529* #
NASA-CASE-NPO-11426	c 07	N73-26119* #	NASA-CASE-NPO-12207-1	c 73	N78-28913* #	NASA-CASE-NPO-13581-2	c 44	N78-31525* #
NASA-CASE-NPO-11429-1	c 74	N77-21941* #	NASA-CASE-NPO-12208-1	c 27	N76-15311* #	NASA-CASE-NPO-13587-1	c 32	N77-32342* #
NASA-CASE-NPO-11432-2	c 35	N74-15090* #	NASA-CASE-NPO-12209-1	c 73	N77-18891* #	NASA-CASE-NPO-13604-1	c 35	N76-31490* #
NASA-CASE-NPO-11437	c 16	N72-28521* #	NASA-CASE-NPO-12210-1	c 33	N75-19519* #	NASA-CASE-NPO-13606-2	c 35	N80-18364* #
NASA-CASE-NPO-11456	c 08	N73-26176* #	NASA-CASE-NPO-12211-1	c 35	N74-23040* #	NASA-CASE-NPO-13613-1	c 37	N76-29590* #
NASA-CASE-NPO-11458A	c 20	N78-32179* #	NASA-CASE-NPO-12212-1	c 36	N75-19652* #	NASA-CASE-NPO-13619-1	c 37	N78-16369* #
NASA-CASE-NPO-11458	c 28	N72-23810* #	NASA-CASE-NPO-12213-1	c 27	N80-32514* #	NASA-CASE-NPO-13620-1	c 27	N77-30236* #
NASA-CASE-NPO-11479	c 15	N73-13462* #	NASA-CASE-NPO-12214-1	c 33	N74-17927* #	NASA-CASE-NPO-13641-1	c 32	N79-24210* #
NASA-CASE-NPO-11481	c 21	N73-13644* #	NASA-CASE-NPO-12215-1	c 60	N76-21914* #	NASA-CASE-NPO-13643-1	c 52	N78-29896* #
NASA-CASE-NPO-11493	c 14	N73-12447* #	NASA-CASE-NPO-12216-1	c 32	N75-24982* #	NASA-CASE-NPO-13644-1	c 52	N78-29895* #
NASA-CASE-NPO-11497	c 08	N73-25206* #	NASA-CASE-NPO-12217-1	c 36	N77-25502* #	NASA-CASE-NPO-13650-1	c 25	N79-28253* #
NASA-CASE-NPO-11510-1	c 33	N77-21315* #	NASA-CASE-NPO-12218-1	c 37	N74-32918* #	NASA-CASE-NPO-13652-1	c 44	N79-17314* #
NASA-CASE-NPO-11515-1	c 33	N77-13315* #	NASA-CASE-NPO-12219-1	c 33	N74-17928* #	NASA-CASE-NPO-13652-2	c 44	N79-24431* #
NASA-CASE-NPO-11548	c 07	N73-26118* #	NASA-CASE-NPO-12220-1	c 35	N74-18090* #	NASA-CASE-NPO-13652-3	c 44	N80-14474* #
NASA-CASE-NPO-11556	c 12	N72-25292* #	NASA-CASE-NPO-12221-1	c 35	N76-14430* #	NASA-CASE-NPO-13663-1	c 35	N77-14406* #
NASA-CASE-NPO-11559	c 28	N73-24784* #	NASA-CASE-NPO-12222-1	c 32	N74-11000* #	NASA-CASE-NPO-13666-1	c 27	N77-13217* #
NASA-CASE-NPO-11569	c 10	N73-26229* #	NASA-CASE-NPO-12223-1	c 36	N75-31427* #	NASA-CASE-NPO-13671-1	c 37	N77-31497* #



NASA-CASE-NPO-13673-1	c 71	N77-26919* #	NASA-CASE-NPO-14124-1	c 46	N80-14603* #	NASA-CASE-NPO-14596-1	c 31	N81-33319* #
NASA-CASE-NPO-13675-1	c 44	N77-32580* #	NASA-CASE-NPO-14126-1	c 44	N79-11470* #	NASA-CASE-NPO-14596-2	c 31	N82-25401* #
NASA-CASE-NPO-13676-1	c 60	N79-20751* #	NASA-CASE-NPO-14130-1	c 34	N79-20335* #	NASA-CASE-NPO-14596-3	c 27	N82-26461* #
NASA-CASE-NPO-13683-1	c 35	N77-14411* #	NASA-CASE-NPO-14134-1	c 71	N79-23753* #	NASA-CASE-NPO-14597-1	c 37	N79-23431* #
NASA-CASE-NPO-13687-1	c 35	N78-18391* #	NASA-CASE-NPO-14140-1	c 31	N78-24387* #	NASA-CASE-NPO-14603-1	c 27	N82-26461* #
NASA-CASE-NPO-13689-2	c 44	N81-29525* #	NASA-CASE-NPO-14140-1	c 43	N81-26509* #	NASA-CASE-NPO-14603-4	c 31	N82-25401* #
NASA-CASE-NPO-13689-4	c 44	N82-28780* #	NASA-CASE-NPO-14143-1	c 25	N81-14015* #	NASA-CASE-NPO-14617-1	c 33	N81-24338* #
NASA-CASE-NPO-13690-1	c 27	N78-19302* #	NASA-CASE-NPO-14152-1	c 32	N80-18252* #	NASA-CASE-NPO-14619-1	c 44	N81-17518* #
NASA-CASE-NPO-13690-2	c 27	N79-14213* #	NASA-CASE-NPO-14162-1	c 60	N81-15706* #	NASA-CASE-NPO-14632-1	c 32	N82-18443* #
NASA-CASE-NPO-13691-1	c 43	N79-12788* #	NASA-CASE-NPO-14163-1	c 33	N81-14220* #	NASA-CASE-NPO-14635-1	c 44	N80-24741* #
NASA-CASE-NPO-13707-1	c 74	N77-28933* #	NASA-CASE-NPO-14167-1	c 60	N81-15706* #	NASA-CASE-NPO-14640-1	c 32	N80-32605* #
NASA-CASE-NPO-13722-1	c 74	N77-22951* #	NASA-CASE-NPO-14170-1	c 37	N81-15364* #	NASA-CASE-NPO-14641-1	c 32	N81-29308* #
NASA-CASE-NPO-13731-1	c 39	N78-10493* #	NASA-CASE-NPO-14173-1	c 04	N80-32359* #	NASA-CASE-NPO-14657-1	c 74	N81-17887* #
NASA-CASE-NPO-13732-1	c 44	N79-10513* #	NASA-CASE-NPO-14174-1	c 74	N79-20856* #	NASA-CASE-NPO-14670-1	c 44	N81-19558* #
NASA-CASE-NPO-13734-1	c 44	N78-10554* #	NASA-CASE-NPO-14191-1	c 31	N80-32584* #	NASA-CASE-NPO-14749-1	c 32	N81-14186* #
NASA-CASE-NPO-13736-1	c 44	N77-32583* #	NASA-CASE-NPO-14192-1	c 39	N80-10507* #	NASA-CASE-NPO-14782-1	c 36	N82-28616* #
NASA-CASE-NPO-13753-1	c 32	N77-20289* #	NASA-CASE-NPO-14199-1	c 44	N79-25482* #	NASA-CASE-NPO-14813-1	c 74	N82-24072* #
NASA-CASE-NPO-13758-2	c 31	N81-15154* #	NASA-CASE-NPO-14200-1	c 44	N79-25482* #	NASA-CASE-NPO-14831-1	c 76	N81-19944* #
NASA-CASE-NPO-13759-1	c 74	N78-17867* #	NASA-CASE-NPO-14205-1	c 44	N79-31752* #	NASA-CASE-NPO-14831-1	c 76	N82-30105* #
NASA-CASE-NPO-13763-1	c 44	N78-33526* #	NASA-CASE-NPO-14212-1	c 52	N80-27072* #	NASA-CASE-NPO-14839-1	c 35	N82-15381* #
NASA-CASE-NPO-13764-1	c 27	N78-17215* #	NASA-CASE-NPO-14219-1	c 74	N81-17886* #	NASA-CASE-NPO-14845-1	c 27	N82-28442* #
NASA-CASE-NPO-13772-1	c 35	N78-10429* #	NASA-CASE-NPO-14220-1	c 37	N81-14318* #	NASA-CASE-NPO-14876-2	c 28	N82-29534* #
NASA-CASE-NPO-13786-1	c 44	N80-29835* #	NASA-CASE-NPO-14221-1	c 37	N81-25370* #	NASA-CASE-NPO-14902-1	c 25	N82-29371* #
NASA-CASE-NPO-13792-1	c 35	N77-32455* #	NASA-CASE-NPO-14224-1	c 33	N80-18287* #	NASA-CASE-NPO-14936-1	c 47	N80-26992* #
NASA-CASE-NPO-13801-1	c 36	N78-18410* #	NASA-CASE-NPO-14229-1	c 33	N80-18285* #	NASA-CASE-NPO-14940-1	c 35	N80-21723* #
NASA-CASE-NPO-13802-1	c 71	N78-10837* #	NASA-CASE-NPO-14231-1	c 46	N80-10709* #	NASA-CASE-NPO-14984-1	c 36	N81-15350* #
NASA-CASE-NPO-13804-1	c 33	N80-23559* #	NASA-CASE-NPO-14237-1	c 44	N80-20808* #	NASA-CASE-NPO-14998-1	c 33	N81-15194* #
NASA-CASE-NPO-13808-1	c 35	N78-15461* #	NASA-CASE-NPO-14253-1	c 32	N80-32605* #	NASA-CASE-NPO-15015-1	c 25	N82-28368* #
NASA-CASE-NPO-13810-1	c 44	N77-32582* #	NASA-CASE-NPO-14254-1	c 36	N80-18372* #	NASA-CASE-NPO-15024-1	c 32	N82-10286* #
NASA-CASE-NPO-13812-1	c 33	N77-30365* #	NASA-CASE-NPO-14255-1	c 46	N79-23555* #	NASA-CASE-NPO-15036-1	c 74	N82-19029* #
NASA-CASE-NPO-13813-1	c 44	N78-31526* #	NASA-CASE-NPO-14258-1	c 35	N81-33448* #	NASA-CASE-NPO-15037-1	c 37	N80-26660* #
NASA-CASE-NPO-13817-1	c 44	N79-11471* #	NASA-CASE-NPO-14260-1	c 28	N79-28342* #	NASA-CASE-NPO-15057-1	c 24	N81-19230* #
NASA-CASE-NPO-13821-1	c 44	N78-28594* #	NASA-CASE-NPO-14272-1	c 25	N81-33246* #	NASA-CASE-NPO-15066-1	c 33	N82-29538* #
NASA-CASE-NPO-13823-1	c 37	N81-25371* #	NASA-CASE-NPO-14273-1	c 25	N82-11144* #	NASA-CASE-NPO-15070-1	c 31	N82-33567* #
NASA-CASE-NPO-13828-1	c 37	N79-11405* #	NASA-CASE-NPO-14295-1	c 76	N80-32245* #	NASA-CASE-NPO-15071-1	c 44	N82-16475* #
NASA-CASE-NPO-13830-1	c 32	N80-14281* #	NASA-CASE-NPO-14297-1	c 33	N81-19389* #	NASA-CASE-NPO-15094-1	c 33	N81-16386* #
NASA-CASE-NPO-13836-1	c 32	N78-15323* #	NASA-CASE-NPO-14298-1	c 76	N80-32244* #	NASA-CASE-NPO-15100-1	c 28	N81-33306* #
NASA-CASE-NPO-13839-1	c 31	N78-25256* #	NASA-CASE-NPO-14303-1	c 44	N80-18550* #	NASA-CASE-NPO-15102-1	c 25	N81-25159* #
NASA-CASE-NPO-13847-2	c 85	N79-17747* #	NASA-CASE-NPO-14305-1	c 44	N80-18550* #	NASA-CASE-NPO-15111-1	c 36	N82-29589* #
NASA-CASE-NPO-13848-2	c 85	N79-17747* #	NASA-CASE-NPO-14311-1	c 33	N82-29539* #	NASA-CASE-NPO-15115-1	c 37	N82-4493* #
NASA-CASE-NPO-13849-1	c 28	N80-10374* #	NASA-CASE-NPO-14315-1	c 27	N81-17261* #	NASA-CASE-NPO-15155-1	c 74	N81-22894* #
NASA-CASE-NPO-13858-1	c 28	N79-11231* #	NASA-CASE-NPO-14316-1	c 33	N81-33404* #	NASA-CASE-NPO-15161-1	c 33	N82-26575* #
NASA-CASE-NPO-13859-1	c 28	N79-11231* #	NASA-CASE-NPO-14324-1	c 72	N80-27163* #	NASA-CASE-NPO-15179-1	c 44	N82-26777* #
NASA-CASE-NPO-13862-1	c 35	N79-10391* #	NASA-CASE-NPO-14326-1	c 32	N80-18253* #	NASA-CASE-NPO-15183-1	c 44	N82-26776* #
NASA-CASE-NPO-13867-1	c 27	N78-14164* #	NASA-CASE-NPO-14329-1	c 52	N81-20703* #	NASA-CASE-NPO-15197-1	c 52	N81-26697* #
NASA-CASE-NPO-13872-1	c 33	N78-10377* #	NASA-CASE-NPO-14340-1	c 45	N80-14579* #	NASA-CASE-NPO-15201-1	c 36	N81-24426* #
NASA-CASE-NPO-13877-1	c 45	N82-11634* #	NASA-CASE-NPO-14350-1	c 33	N80-14332* #	NASA-CASE-NPO-15205-1	c 37	N81-19457* #
NASA-CASE-NPO-13886-1	c 32	N78-24391* #	NASA-CASE-NPO-14361-1	c 32	N82-23376* #	NASA-CASE-NPO-15210-1	c 28	N82-26481* #
NASA-CASE-NPO-13899-1	c 27	N80-32515* #	NASA-CASE-NPO-14362-1	c 32	N80-16261* #	NASA-CASE-NPO-15211-1	c 36	N81-24425* #
NASA-CASE-NPO-13904-1	c 25	N79-11152* #	NASA-CASE-NPO-14363-1	c 39	N81-25400* #	NASA-CASE-NPO-15213-1	c 51	N81-29728* #
NASA-CASE-NPO-13906-1	c 54	N79-24652* #	NASA-CASE-NPO-14372-1	c 35	N80-26635* #	NASA-CASE-NPO-15220-1	c 35	N81-24414* #
NASA-CASE-NPO-13907-1	c 28	N80-10374* #	NASA-CASE-NPO-14381-1	c 31	N78-24387* #	NASA-CASE-NPO-15226-1	c 74	N81-19899* #
NASA-CASE-NPO-13909-1	c 33	N78-25319* #	NASA-CASE-NPO-14382-1	c 31	N80-18231* #	NASA-CASE-NPO-15227-1	c 37	N81-33482* #
NASA-CASE-NPO-13910-1	c 52	N79-27836* #	NASA-CASE-NPO-14382-1	c 43	N81-26509* #	NASA-CASE-NPO-15251-1	c 31	N81-19344* #
NASA-CASE-NPO-13913-1	c 52	N79-12694* #	NASA-CASE-NPO-14384-1	c 37	N80-10494* #	NASA-CASE-NPO-15254-1	c 31	N81-19344* #
NASA-CASE-NPO-13914-1	c 44	N78-31526* #	NASA-CASE-NPO-14388-1	c 37	N81-17432* #	NASA-CASE-NPO-15264-1	c 04	N81-22036* #
NASA-CASE-NPO-13918-1	c 76	N79-11920* #	NASA-CASE-NPO-14395-1	c 37	N82-21587* #	NASA-CASE-NPO-15269-1	c 44	N82-29710* #
NASA-CASE-NPO-13921-1	c 44	N79-14526* #	NASA-CASE-NPO-14402-1	c 52	N81-27783* #	NASA-CASE-NPO-15295-1	c 60	N82-11785* #
NASA-CASE-NPO-13930-1	c 52	N79-14749* #	NASA-CASE-NPO-14406-1	c 37	N80-29703* #	NASA-CASE-NPO-15304-1	c 28	N82-12240* #
NASA-CASE-NPO-13935-1	c 52	N79-14751* #	NASA-CASE-NPO-14410-1	c 33	N79-25314* #	NASA-CASE-NPO-15334-1	c 37	N82-22497* #
NASA-CASE-NPO-13937-1	c 44	N78-31527* #	NASA-CASE-NPO-14410-2	c 33	N82-25440* #	NASA-CASE-NPO-15341-1	c 33	N82-12346* #
NASA-CASE-NPO-13941-1	c 32	N79-10262* #	NASA-CASE-NPO-14416-1	c 44	N81-14389* #	NASA-CASE-NPO-15345-1	c 33	N81-27403* #
NASA-CASE-NPO-13944-1	c 52	N79-14751* #	NASA-CASE-NPO-14424-1	c 33	N80-32650* #	NASA-CASE-NPO-15388-1	c 44	N82-10496* #
NASA-CASE-NPO-13945-1	c 36	N78-27402* #	NASA-CASE-NPO-14426-1	c 33	N79-17134* #	NASA-CASE-NPO-15398-1	c 35	N81-33449* #
NASA-CASE-NPO-13948-1	c 35	N78-25391* #	NASA-CASE-NPO-14426-1	c 33	N81-27396* #	NASA-CASE-NPO-15399-1	c 75	N82-24079* #
NASA-CASE-NPO-13953-1	c 35	N79-28527* #	NASA-CASE-NPO-14430-1	c 33	N80-32650* #	NASA-CASE-NPO-15400-1	c 34	N81-24384* #
NASA-CASE-NPO-13958-1	c 25	N79-11151* #	NASA-CASE-NPO-14435-1	c 33	N81-33405* #	NASA-CASE-NPO-15401-1	c 33	N81-29344* #
NASA-CASE-NPO-13969-1	c 76	N79-23798* #	NASA-CASE-NPO-14444-1	c 33	N81-15192* #	NASA-CASE-NPO-15406-1	c 33	N82-12345* #
NASA-CASE-NPO-13970-1	c 33	N81-20352* #	NASA-CASE-NPO-14448-1	c 74	N81-29963* #	NASA-CASE-NPO-15419-1	c 44	N81-27599* #
NASA-CASE-NPO-13982-1	c 32	N79-14267* #	NASA-CASE-NPO-14467-1	c 44	N79-31753* #	NASA-CASE-NPO-15423-1	c 91	N82-25042* #
NASA-CASE-NPO-13983-1	c 72	N79-13826* #	NASA-CASE-NPO-14473-1	c 37	N80-23654* #	NASA-CASE-NPO-15430-1	c 46	N82-26890* #
NASA-CASE-NPO-13989-1	c 35	N78-18395* #	NASA-CASE-NPO-14474-1	c 26	N80-14229* #	NASA-CASE-NPO-15431-1	c 25	N81-29178* #
NASA-CASE-NPO-14000-1	c 33	N79-24254* #	NASA-CASE-NPO-14477-1	c 28	N80-28536* #	NASA-CASE-NPO-15435-1	c 71	N81-27887* #
NASA-CASE-NPO-14001-1	c 27	N81-14076* #	NASA-CASE-NPO-14480-1	c 32	N80-20448* #	NASA-CASE-NPO-15437-1	c 46	N82-26890* #
NASA-CASE-NPO-14005-1	c 71	N79-20827* #	NASA-CASE-NPO-14501-1	c 35	N80-18357* #	NASA-CASE-NPO-15453-1	c 71	N82-12889* #
NASA-CASE-NPO-14009-1	c 32	N79-13214* #	NASA-CASE-NPO-14502-1	c 74	N81-17888* #	NASA-CASE-NPO-15454-1	c 73	N82-12916* #
NASA-CASE-NPO-14014-1	c 37	N79-10420* #	NASA-CASE-NPO-14505-1	c 33	N81-19393* #	NASA-CASE-NPO-15465-1	c 18	N82-10106* #
NASA-CASE-NPO-14019-1	c 52	N79-14268* #	NASA-CASE-NPO-14513-1	c 35	N81-14287* #	NASA-CASE-NPO-15466-1	c 71	N82-27087* #
NASA-CASE-NPO-14021-2	c 27	N80-16163* #	NASA-CASE-NPO-14519-1	c 32	N80-23524* #	NASA-CASE-NPO-15483-1	c 37	N82-28642* #
NASA-CASE-NPO-14022-1	c 32	N78-31321* #	NASA-CASE-NPO-14521-1	c 54	N79-20746* #	NASA-CASE-NPO-15494-1	c 35	N82-25484* #
NASA-CASE-NPO-14035-1	c 32	N78-18266* #	NASA-CASE-NPO-14521-1	c 37	N81-27519* #	NASA-CASE-NPO-15496-1	c 44	N82-28784* #
NASA-CASE-NPO-14054-1	c 32	N82-12297* #	NASA-CASE-NPO-14524-1	c 32	N80-24510* #	NASA-CASE-NPO-15516-1	c 36	N82-26652* #
NASA-CASE-NPO-14056-1	c 33	N79-24257* #	NASA-CASE-NPO-14525-1	c 32	N79-19195* #	NASA-CASE-NPO-15519-1	c 32	N82-12298* #
NASA-CASE-NPO-14058-1	c 44	N79-18443* #	NASA-CASE-NPO-14525-2	c 32	N80-32607* #	NASA-CASE-NPO-15522-1	c 71	N82-11861* #
NASA-CASE-NPO-14066-1	c 74	N79-34011* #	NASA-CASE-NPO-14527-1	c 32	N80-24510* #	NASA-CASE-NPO-15530-1	c 76	N82-24993* #
NASA-CASE-NPO-14078-1	c 72	N80-14877* #	NASA-CASE-NPO-14536-1	c 32	N81-14185* #	NASA-CASE-NPO-15539-1	c 37	N82-11469* #
NASA-CASE-NPO-14079-1	c 25	N80-20334* #	NASA-CASE-NPO-14542-1	c 25	N82-23282* #	NASA-CASE-NPO-15558-1	c 35	N82-26636* #
NASA-CASE-NPO-14082-1	c 52	N80-16725* #	NASA-CASE-NPO-14544-1	c 46	N82-12685* #	NASA-CASE-NPO-15559-1	c 71	N82-29112* #
NASA-CASE-NPO-14083-1	c 35	N80-20563* #	NASA-CASE-NPO-14549-2	c 52	N82-33996* #	NASA-CASE-NPO-15562-1	c 71	N82-27086* #
NASA-CASE-NPO-14096-1	c 44	N80-18551* #	NASA-CASE-NPO-14554-1	c 60	N81-27814* #	NASA-CASE-NPO-15617-1	c 35	N82-33681* #
NASA-CASE-NPO-14100-1	c 44	N79-12541* #	NASA-CASE-NPO-14556-1	c 33	N82-24418* #	NASA-CASE-NPO-15622-1	c 91	N82-25042* #
NASA-CASE-NPO-14101-1	c 52	N80-14687* #	NASA-CASE-NPO-14558-1	c 46	N80-24906* #	NASA-CASE-NPO-15625-1	c 76	N82-25995* #
NASA-CASE-NPO-14103-1	c 28	N78-31255* #	NASA-CASE-NPO-14579-1	c 32	N80-18253* #	NASA-CASE-NPO-15629-1	c 44	N82-26779* #
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NASA-CASE-XLE-00342	c 28	N70-37980* #	NASA-CASE-XLE-04250	c 23	N71-22881* #	NASA-CASE-XMF-01174	c 02	N70-41589* #
NASA-CASE-XLE-00345	c 15	N70-38020* #	NASA-CASE-XLE-04501	c 09	N71-20446* #	NASA-CASE-XMF-01371	c 15	N70-41829* #
NASA-CASE-XLE-00353	c 18	N70-39897* #	NASA-CASE-XLE-04501	c 09	N71-23190* #	NASA-CASE-XMF-01402	c 18	N71-21651* #
NASA-CASE-XLE-00376	c 28	N70-37245* #	NASA-CASE-XLE-04503	c 14	N71-24864* #	NASA-CASE-XMF-01452	c 15	N70-41371* #
NASA-CASE-XLE-00387	c 33	N70-34812* #	NASA-CASE-XLE-04526	c 03	N71-11052* #	NASA-CASE-XMF-01483	c 14	N69-27431* #
NASA-CASE-XLE-00388	c 28	N70-34788* #	NASA-CASE-XLE-04535	c 03	N71-23354* #	NASA-CASE-XMF-01543	c 31	N71-17730* #
NASA-CASE-XLE-00397	c 15	N70-36492* #	NASA-CASE-XLE-04599	c 22	N72-20597* #	NASA-CASE-XMF-01544	c 28	N70-34162* #
NASA-CASE-XLE-00409	c 28	N71-15658* #	NASA-CASE-XLE-04603	c 33	N71-21507* #	NASA-CASE-XMF-01598	c 21	N71-15583* #
NASA-CASE-XLE-00454	c 23	N71-17802* #	NASA-CASE-XLE-04677	c 15	N71-10577* #	NASA-CASE-XMF-01599	c 09	N70-20705* #
NASA-CASE-XLE-00455	c 28	N70-38197* #	NASA-CASE-XLE-04787	c 03	N71-20492* #	NASA-CASE-XMF-01667	c 15	N71-17647* #
NASA-CASE-XLE-00490	c 33	N70-34545* #	NASA-CASE-XLE-04788	c 09	N71-22897* #	NASA-CASE-XMF-01669	c 21	N71-23289* #
NASA-CASE-XLE-00503	c 14	N70-34818* #	NASA-CASE-XLE-04791	c 32	N74-22096* #	NASA-CASE-XMF-01730	c 15	N71-23050* #
NASA-CASE-XLE-00519	c 28	N70-41576* #	NASA-CASE-XLE-04857	c 28	N71-23968* #	NASA-CASE-XMF-01772	c 11	N70-41677* #
NASA-CASE-XLE-00586	c 15	N71-15968* #	NASA-CASE-XLE-04946	c 17	N71-24911* #	NASA-CASE-XMF-01779	c 12	N71-20815* #
NASA-CASE-XLE-00620	c 32	N70-41579* #	NASA-CASE-XLE-05033	c 15	N71-23810* #	NASA-CASE-XMF-01799	c 28	N70-41582* #
NASA-CASE-XLE-00660	c 28	N70-39925* #	NASA-CASE-XLE-05079	c 15	N71-17652* #	NASA-CASE-XMF-01813	c 15	N71-10617* #
NASA-CASE-XLE-00685	c 28	N70-41992* #	NASA-CASE-XLE-05130-2	c 15	N71-19570* #	NASA-CASE-XMF-01887	c 10	N71-22986* #
NASA-CASE-XLE-00688	c 14	N70-41330* #	NASA-CASE-XLE-05130	c 15	N69-21362* #	NASA-CASE-XMF-01899	c 31	N70-41948* #
NASA-CASE-XLE-00690	c 25	N69-39884* #	NASA-CASE-XLE-05230-2	c 14	N73-13417* #	NASA-CASE-XMF-01973	c 31	N70-41588* #
NASA-CASE-XLE-00702	c 14	N70-40203* #	NASA-CASE-XLE-05230	c 14	N72-27410* #	NASA-CASE-XMF-01974	c 14	N71-22752* #
NASA-CASE-XLE-00703	c 15	N71-15967* #	NASA-CASE-XLE-05260	c 14	N71-20429* #	NASA-CASE-XMF-02039	c 15	N71-15871* #
NASA-CASE-XLE-00715	c 15	N70-34859* #	NASA-CASE-XLE-05641-1	c 15	N71-28346* #	NASA-CASE-XMF-02107	c 15	N71-10809* #
NASA-CASE-XLE-00720	c 14	N70-40201* #	NASA-CASE-XLE-05689	c 28	N71-15659* #	NASA-CASE-XMF-02108	c 31	N70-36845* #
NASA-CASE-XLE-00726	c 17	N71-15644* #	NASA-CASE-XLE-05913	c 33	N71-14032* #	NASA-CASE-XMF-02221	c 18	N71-27170* #
NASA-CASE-XLE-00785	c 33	N71-16104* #	NASA-CASE-XLE-06094	c 33	N78-17293* #	NASA-CASE-XMF-02263	c 05	N74-10907* #
NASA-CASE-XLE-00787	c 14	N71-21090* #	NASA-CASE-XLE-06461-2	c 17	N72-28535* #	NASA-CASE-XMF-02303	c 17	N71-23828* #
NASA-CASE-XLE-00808	c 24	N71-10560* #	NASA-CASE-XLE-06461	c 17	N72-22530* #	NASA-CASE-XMF-02307	c 14	N71-10779* #
NASA-CASE-XLE-00810	c 15	N70-34861* #	NASA-CASE-XLE-06773	c 15	N71-23817* #	NASA-CASE-XMF-02330	c 15	N71-23798* #
NASA-CASE-XLE-00815	c 15	N70-35407* #	NASA-CASE-XLE-06774-2	c 06	N72-25150* #	NASA-CASE-XMF-02392	c 32	N71-24285* #
NASA-CASE-XLE-00817	c 28	N70-33265* #	NASA-CASE-XLE-06969	c 17	N71-24142* #	NASA-CASE-XMF-02433	c 14	N71-10616* #
NASA-CASE-XLE-00820	c 14	N71-16014* #	NASA-CASE-XLE-07087	c 06	N69-39889* #	NASA-CASE-XMF-02526-1	c 27	N79-21190* #
NASA-CASE-XLE-00953	c 15	N71-15966* #	NASA-CASE-XLE-08511-2	c 18	N71-16105* #	NASA-CASE-XMF-02527-1	c 27	N79-21190* #
NASA-CASE-XLE-01015	c 03	N69-39898* #	NASA-CASE-XLE-08511	c 18	N71-23710* #	NASA-CASE-XMF-02584	c 06	N71-20905* #
NASA-CASE-XLE-01092	c 15	N71-22797* #	NASA-CASE-XLE-08569-2	c 03	N71-24681* #	NASA-CASE-XMF-02783-1	c 27	N79-21190* #
NASA-CASE-XLE-01124	c 28	N71-14043* #	NASA-CASE-XLE-08569	c 03	N71-23449* #	NASA-CASE-XMF-02786	c 17	N71-20743* #
NASA-CASE-XLE-01182	c 27	N71-15635* #	NASA-CASE-XLE-08917-2	c 15	N71-24836* #	NASA-CASE-XMF-02822	c 14	N70-41994* #
NASA-CASE-XLE-01246	c 14	N71-10797* #	NASA-CASE-XLE-08917	c 15	N71-15597* #	NASA-CASE-XMF-02853	c 31	N70-36654* #
NASA-CASE-XLE-01300	c 15	N70-41993* #	NASA-CASE-XLE-09341	c 12	N71-28741* #	NASA-CASE-XMF-02984	c 14	N71-17659* #
NASA-CASE-XLE-01399	c 33	N71-15625* #	NASA-CASE-XLE-09475-1	c 33	N71-15568* #	NASA-CASE-XMF-02986	c 10	N71-24863* #
NASA-CASE-XLE-01449	c 15	N70-41646* #	NASA-CASE-XLE-09527-2	c 15	N71-26189* #	NASA-CASE-XMF-03074	c 06	N71-24740* #
NASA-CASE-XLE-01481	c 14	N71-10781* #	NASA-CASE-XLE-09527	c 15	N71-17688* #	NASA-CASE-XMF-03169	c 31	N71-15675* #
NASA-CASE-XLE-01512	c 12	N70-40124* #	NASA-CASE-XLE-10326-2	c 15	N72-29488* #	NASA-CASE-XMF-03198	c 30	N70-40353* #
NASA-CASE-XLE-01533	c 11	N71-10777* #	NASA-CASE-XLE-10326-4	c 37	N74-15125* #	NASA-CASE-XMF-03212	c 15	N71-22721* #
NASA-CASE-XLE-01604-2	c 15	N71-15610* #	NASA-CASE-XLE-10337	c 15	N71-24046* #	NASA-CASE-XMF-03248	c 11	N71-10804* #
NASA-CASE-XLE-01809	c 14	N71-10500* #	NASA-CASE-XLE-103477-1	c 28	N71-20330* #	NASA-CASE-XMF-03287	c 15	N71-15607* #
NASA-CASE-XLE-01840	c 31	N71-15637* #	NASA-CASE-XLE-10453-2	c 28	N73-27899* #	NASA-CASE-XMF-03290	c 15	N71-23256* #
NASA-CASE-XLE-01845	c 03	N71-20804* #	NASA-CASE-XLE-10468	c 17	N69-25147* #	NASA-CASE-XMF-03498	c 15	N71-15986* #
			NASA-CASE-XLE-10529	c 14	N69-23191* #	NASA-CASE-XMF-03511	c 15	N71-22799* #
			NASA-CASE-XLE-10715	c 28	N71-23292* #			



NASA-CASE-XMF-03793	c 15	N71-24833*	NASA-CASE-XMS-01295-1	c 37	N79-21345* #	NASA-CASE-XMS-06949	c 09	N69-21467* #
NASA-CASE-XMF-03844-1	c 14	N71-26474*	NASA-CASE-XMS-01315	c 09	N70-41675* #	NASA-CASE-XMS-07168	c 07	N71-11300* #
NASA-CASE-XMF-03856	c 31	N70-34159* #	NASA-CASE-XMS-01330	c 37	N75-27376* #	NASA-CASE-XMS-07487	c 15	N71-23255*
NASA-CASE-XMF-03873	c 06	N69-39733* #	NASA-CASE-XMS-01445	c 12	N71-16031*	NASA-CASE-XMS-07846-1	c 09	N69-21927* #
NASA-CASE-XMF-03934	c 09	N71-22985*	NASA-CASE-XMS-01492	c 05	N70-41297* #	NASA-CASE-XMS-08589-1	c 09	N71-20569*
NASA-CASE-XMF-03968	c 14	N71-27186*	NASA-CASE-XMS-01546	c 14	N70-40233* #	NASA-CASE-XMS-09310	c 15	N71-22706*
NASA-CASE-XMF-03988	c 15	N71-21403*	NASA-CASE-XMS-01554	c 10	N71-10578* #	NASA-CASE-XMS-09352	c 09	N71-23316*
NASA-CASE-XMF-04042	c 15	N71-23023*	NASA-CASE-XMS-01615	c 05	N70-41329* #	NASA-CASE-XMS-09571	c 05	N71-19439*
NASA-CASE-XMF-04132	c 15	N69-27502* #	NASA-CASE-XMS-01618	c 14	N71-20741*	NASA-CASE-XMS-09610	c 07	N71-24625*
NASA-CASE-XMF-04133	c 06	N71-20717*	NASA-CASE-XMS-01620	c 23	N71-15673*	NASA-CASE-XMS-09632-1	c 05	N71-11203* #
NASA-CASE-XMF-04134	c 14	N71-23755*	NASA-CASE-XMS-01624	c 15	N70-40062* #	NASA-CASE-XMS-09635	c 05	N71-24623*
NASA-CASE-XMF-04163	c 02	N71-23007*	NASA-CASE-XMS-01625	c 15	N71-23022*	NASA-CASE-XMS-09636	c 05	N71-12344* #
NASA-CASE-XMF-04208	c 33	N71-29051*	NASA-CASE-XMS-01816	c 33	N71-15623*	NASA-CASE-XMS-09637-1	c 05	N71-24730*
NASA-CASE-XMF-04237	c 33	N71-16278*	NASA-CASE-XMS-01905	c 12	N71-21089*	NASA-CASE-XMS-09652-1	c 05	N71-26333*
NASA-CASE-XMF-04238	c 09	N69-39734* #	NASA-CASE-XMS-01906	c 31	N70-41373* #	NASA-CASE-XMS-09653	c 54	N78-17680* #
NASA-CASE-XMF-04367	c 09	N71-23545*	NASA-CASE-XMS-01991	c 09	N71-21449*	NASA-CASE-XMS-09690	c 33	N72-25913* #
NASA-CASE-XMF-04415	c 14	N71-24693*	NASA-CASE-XMS-01994-1	c 14	N72-17326* #	NASA-CASE-XMS-09691-1	c 18	N71-15545*
NASA-CASE-XMF-04494-1	c 33	N79-33392* #	NASA-CASE-XMS-02009	c 33	N71-20834*	NASA-CASE-XMS-10269	c 05	N71-24147*
NASA-CASE-XMF-04592-1	c 20	N79-21125* #	NASA-CASE-XMS-02063	c 03	N71-29044*	NASA-CASE-XMS-10660-1	c 15	N71-25975*
NASA-CASE-XMF-04593-1	c 20	N79-21125* #	NASA-CASE-XMS-02087	c 09	N70-41717* #	NASA-CASE-XMS-10680-1	c 10	N71-19417*
NASA-CASE-XMF-04680	c 15	N71-19489*	NASA-CASE-XMS-02159	c 10	N71-22961*	NASA-CASE-XMS-10984-1	c 15	N71-28936*
NASA-CASE-XMF-04709	c 15	N71-15609* #	NASA-CASE-XMS-02182	c 10	N71-22783*	NASA-CASE-XMS-10993	c 31	N69-27499* #
NASA-CASE-XMF-04958-1	c 10	N71-26414*	NASA-CASE-XMS-02184	c 15	N71-20813*	NASA-CASE-XMS-12158-1	c 14	N71-20427*
NASA-CASE-XMF-04966	c 14	N71-17658*	NASA-CASE-XMS-02383	c 15	N71-15918*			
NASA-CASE-XMF-05046	c 33	N71-28892*	NASA-CASE-XMS-02399	c 05	N71-22896*			
NASA-CASE-XMF-05114-2	c 15	N71-26148*	NASA-CASE-XMS-02532	c 15	N70-41808* #	NASA-CASE-XNP-00214	c 15	N70-36908* #
NASA-CASE-XMF-05114-3	c 15	N71-24865*	NASA-CASE-XMS-02677	c 31	N70-42075* #	NASA-CASE-XNP-00217	c 28	N70-38181* #
NASA-CASE-XMF-05114	c 15	N71-17650*	NASA-CASE-XMS-02744	c 33	N75-27249* #	NASA-CASE-XNP-00234	c 28	N70-38645* #
NASA-CASE-XMF-05195	c 10	N71-24861*	NASA-CASE-XMS-02872	c 05	N69-21925* #	NASA-CASE-XNP-00249	c 28	N70-38249* #
NASA-CASE-XMF-05224	c 14	N71-23726*	NASA-CASE-XMS-02930	c 11	N71-23042*	NASA-CASE-XNP-00250	c 11	N71-28778*
NASA-CASE-XMF-05279	c 18	N71-16124*	NASA-CASE-XMS-02952	c 18	N71-20742*	NASA-CASE-XNP-00294	c 21	N70-36938* #
NASA-CASE-XMF-05344	c 31	N71-16345*	NASA-CASE-XMS-02977	c 11	N71-10746* #	NASA-CASE-XNP-00384	c 09	N71-13530* #
NASA-CASE-XMF-05373-1	c 33	N79-21264* #	NASA-CASE-XMS-03252	c 15	N71-10658* #	NASA-CASE-XNP-00416	c 15	N70-36947* #
NASA-CASE-XMF-05757-1	c 31	N79-21227* #	NASA-CASE-XMS-03371	c 05	N70-42000* #	NASA-CASE-XNP-00425	c 11	N70-38202* #
NASA-CASE-XMF-05835	c 08	N71-12504*	NASA-CASE-XMS-03454	c 09	N71-20658*	NASA-CASE-XNP-00431	c 09	N70-38998* #
NASA-CASE-XMF-05843	c 03	N71-11055*	NASA-CASE-XMS-03537	c 15	N69-21471* #	NASA-CASE-XNP-00432	c 08	N70-35423* #
NASA-CASE-XMF-05844	c 14	N71-17587*	NASA-CASE-XMS-03542	c 09	N71-28926*	NASA-CASE-XNP-00438	c 21	N70-35089* #
NASA-CASE-XMF-05868	c 26	N75-27125* #	NASA-CASE-XMS-03613	c 31	N71-16346*	NASA-CASE-XNP-00449	c 14	N70-35220* #
NASA-CASE-XMF-05882	c 35	N75-27329* #	NASA-CASE-XMS-03694-1	c 54	N82-29002* #	NASA-CASE-XNP-00450	c 15	N70-38603* #
NASA-CASE-XMF-05941	c 31	N71-23912*	NASA-CASE-XMS-03700	c 15	N69-24266* #	NASA-CASE-XNP-00459	c 11	N70-38675* #
NASA-CASE-XMF-05964-1	c 20	N79-21124* #	NASA-CASE-XMS-03722	c 15	N71-21530*	NASA-CASE-XNP-00463	c 33	N70-36847* #
NASA-CASE-XMF-05999	c 15	N71-29032*	NASA-CASE-XMS-03745	c 15	N71-21076*	NASA-CASE-XNP-00465	c 21	N70-35395* #
NASA-CASE-XMF-06053	c 26	N75-27126* #	NASA-CASE-XMS-03792	c 14	N70-41812* #	NASA-CASE-XNP-00476	c 15	N70-38620* #
NASA-CASE-XMF-06065	c 15	N71-20395*	NASA-CASE-XMS-04061-1	c 09	N69-39885* #	NASA-CASE-XNP-00477	c 08	N73-28045* #
NASA-CASE-XMF-06092	c 07	N71-24612*	NASA-CASE-XMS-04072	c 15	N70-42017* #	NASA-CASE-XNP-00540	c 09	N70-35382* #
NASA-CASE-XMF-06409	c 06	N71-23230*	NASA-CASE-XMS-04142	c 31	N70-41631* #	NASA-CASE-XNP-00595	c 15	N70-34967* #
NASA-CASE-XMF-06515	c 14	N71-23227*	NASA-CASE-XMS-04170	c 05	N71-22748*	NASA-CASE-XNP-00597	c 18	N71-23088*
NASA-CASE-XMF-06519	c 09	N71-12519* #	NASA-CASE-XMS-04178	c 15	N71-22788*	NASA-CASE-XNP-00610	c 28	N70-36910* #
NASA-CASE-XMF-06531	c 14	N71-17575*	NASA-CASE-XMS-04201	c 14	N71-22990*	NASA-CASE-XNP-00611	c 09	N70-35219* #
NASA-CASE-XMF-06589	c 05	N71-23159*	NASA-CASE-XMS-04212-1	c 05	N71-12346* #	NASA-CASE-XNP-00612	c 11	N70-38182* #
NASA-CASE-XMF-06617	c 09	N71-24843*	NASA-CASE-XMS-04213-1	c 09	N71-26002*	NASA-CASE-XNP-00614	c 14	N70-36907* #
NASA-CASE-XMF-06884-1	c 20	N79-21123* #	NASA-CASE-XMS-04215-1	c 09	N69-39987* #	NASA-CASE-XNP-00637	c 14	N70-40273* #
NASA-CASE-XMF-06888	c 15	N71-24044*	NASA-CASE-XMS-04268	c 33	N71-16277*	NASA-CASE-XNP-00644	c 03	N70-36803* #
NASA-CASE-XMF-06892	c 09	N71-24805*	NASA-CASE-XMS-04269	c 16	N71-22895*	NASA-CASE-XNP-00646	c 14	N70-35666* #
NASA-CASE-XMF-06900-1	c 27	N79-21191* #	NASA-CASE-XMS-04292	c 15	N71-22722*	NASA-CASE-XNP-00650	c 27	N71-28929*
NASA-CASE-XMF-06926	c 28	N71-22983*	NASA-CASE-XMS-04300	c 09	N71-19479*	NASA-CASE-XNP-00676	c 15	N70-38998* #
NASA-CASE-XMF-07069	c 15	N71-23815*	NASA-CASE-XMS-04312	c 07	N71-22984*	NASA-CASE-XNP-00683	c 09	N70-35425* #
NASA-CASE-XMF-07488	c 11	N71-18773*	NASA-CASE-XMS-04318	c 15	N69-27871* #	NASA-CASE-XNP-00708	c 14	N70-35394* #
NASA-CASE-XMF-07587	c 15	N71-18701*	NASA-CASE-XMS-04390	c 31	N70-41871* #	NASA-CASE-XNP-00710	c 15	N71-10778* #
NASA-CASE-XMF-07770-2	c 18	N71-26772*	NASA-CASE-XMS-04533	c 15	N71-23086*	NASA-CASE-XNP-00732	c 28	N70-41447* #
NASA-CASE-XMF-07808	c 15	N71-23812*	NASA-CASE-XMS-04545	c 15	N71-22878*	NASA-CASE-XNP-00733	c 06	N70-34946* #
NASA-CASE-XMF-08217	c 03	N71-23239*	NASA-CASE-XMS-04625	c 05	N71-20718*	NASA-CASE-XNP-00738	c 09	N70-38201* #
NASA-CASE-XMF-08522	c 15	N71-19486*	NASA-CASE-XMS-04670	c 54	N78-17678* #	NASA-CASE-XNP-00745	c 10	N71-28960*
NASA-CASE-XMF-08523	c 31	N71-20396*	NASA-CASE-XMS-04798	c 11	N71-21474*	NASA-CASE-XNP-00746	c 07	N71-21476*
NASA-CASE-XMF-08651	c 06	N71-11236* #	NASA-CASE-XMS-04826	c 28	N71-28849*	NASA-CASE-XNP-00748	c 07	N70-36911* #
NASA-CASE-XMF-08652	c 06	N71-11243* #	NASA-CASE-XMS-04843	c 03	N69-21469* #	NASA-CASE-XNP-00777	c 10	N71-19469*
NASA-CASE-XMF-08655	c 06	N71-11239* #	NASA-CASE-XMS-04890-1	c 15	N70-22192* #	NASA-CASE-XNP-00816	c 28	N71-28928*
NASA-CASE-XMF-08656	c 06	N71-11242* #	NASA-CASE-XMS-04917	c 14	N69-24257* #	NASA-CASE-XNP-00826	c 03	N71-20895*
NASA-CASE-XMF-08665	c 10	N71-19467*	NASA-CASE-XMS-04919	c 09	N71-23270*	NASA-CASE-XNP-00840	c 15	N70-38225* #
NASA-CASE-XMF-08674	c 06	N71-28807*	NASA-CASE-XMS-04928	c 54	N78-17679* #	NASA-CASE-XNP-00876	c 28	N70-41311* #
NASA-CASE-XMF-08804	c 09	N71-24717*	NASA-CASE-XMS-04935	c 05	N71-11190*	NASA-CASE-XNP-00911	c 08	N70-41961* #
NASA-CASE-XMF-09422	c 07	N71-19436*	NASA-CASE-XMS-05303	c 07	N69-27462* #	NASA-CASE-XNP-00920	c 15	N71-15908*
NASA-CASE-XMF-09902	c 15	N72-11387*	NASA-CASE-XMS-05304	c 05	N71-12336* #	NASA-CASE-XNP-00952	c 10	N71-23271*
NASA-CASE-XMF-10040	c 15	N71-22877*	NASA-CASE-XMS-05307	c 09	N69-24330* #	NASA-CASE-XNP-01012	c 08	N71-28925*
NASA-CASE-XMF-10289	c 14	N71-23699*	NASA-CASE-XMS-05365	c 14	N71-22993*	NASA-CASE-XNP-01020	c 03	N71-12260* #
NASA-CASE-XMF-10753	c 06	N71-11237* #	NASA-CASE-XMS-05454-1	c 07	N71-12391* #	NASA-CASE-XNP-01056	c 14	N71-23041*
NASA-CASE-XMF-10968	c 14	N71-24234*	NASA-CASE-XMS-05516	c 15	N71-17803*	NASA-CASE-XNP-01057	c 07	N71-15907*
NASA-CASE-XMF-14032	c 20	N71-16340*	NASA-CASE-XMS-05562-1	c 09	N69-39986* #	NASA-CASE-XNP-01058	c 09	N71-12540* #
NASA-CASE-XMF-14301	c 09	N71-23188*	NASA-CASE-XMS-05605-1	c 10	N71-19468*	NASA-CASE-XNP-01059	c 23	N71-21821*
			NASA-CASE-XMS-05731	c 35	N75-29382* #	NASA-CASE-XNP-01068	c 10	N71-28739*
			NASA-CASE-XMS-05890	c 09	N71-23191*	NASA-CASE-XNP-01104	c 28	N70-39931* #
NASA-CASE-XMS-00259	c 18	N70-38400* #	NASA-CASE-XMS-05894-1	c 15	N69-21924* #	NASA-CASE-XNP-01107	c 10	N71-28859*
NASA-CASE-XMS-00486	c 33	N70-33344*	NASA-CASE-XMS-05909-1	c 14	N69-27459* #	NASA-CASE-XNP-01152	c 15	N70-41811* #
NASA-CASE-XMS-00583	c 28	N70-38504* #	NASA-CASE-XMS-05936	c 14	N70-41682* #	NASA-CASE-XNP-01153	c 32	N71-17645*
NASA-CASE-XMS-00784	c 05	N71-12335* #	NASA-CASE-XMS-06056-1	c 23	N71-24857*	NASA-CASE-XNP-01185	c 26	N73-28710* #
NASA-CASE-XMS-00863	c 05	N70-34857* #	NASA-CASE-XMS-06061	c 05	N71-23317*	NASA-CASE-XNP-01187	c 15	N73-28516* #
NASA-CASE-XMS-00864	c 05	N70-36493* #	NASA-CASE-XMS-06064	c 05	N71-23096*	NASA-CASE-XNP-01188	c 15	N73-32361* #
NASA-CASE-XMS-00893	c 07	N70-40063* #	NASA-CASE-XMS-06162	c 31	N71-28851*	NASA-CASE-XNP-01193	c 10	N71-16057*
NASA-CASE-XMS-00907	c 02	N70-41630* #	NASA-CASE-XMS-06236	c 14	N71-21007*	NASA-CASE-XNP-01263-2	c 15	N71-26312*
NASA-CASE-XMS-00913	c 10	N71-23543*	NASA-CASE-XMS-06329-1	c 15	N71-20441*	NASA-CASE-XNP-01296	c 33	N75-27250* #
NASA-CASE-XMS-00945	c 09	N71-10798* #	NASA-CASE-XMS-06497	c 14	N71-26244*	NASA-CASE-XNP-01306-2	c 09	N71-24596*
NASA-CASE-XMS-01077-1	c 37	N79-33467* #	NASA-CASE-XMS-06740-1	c 07	N71-26579*	NASA-CASE-XNP-01306	c 07	N71-20814*
NASA-CASE-XMS-01108	c 15	N69-24322* #	NASA-CASE-XMS-06761	c 05	N69-23192* #	NASA-CASE-XNP-01307	c 21	N70-41856* #
NASA-CASE-XMS-01115	c 05	N70-39922* #	NASA-CASE-XMS-06767-1	c 14	N71-20435*	NASA-CASE-XNP-01310	c 33	N71-28852*
NASA-CASE-XMS-01177	c 05	N71-19440*	NASA-CASE-XMS-06782	c 32	N71-15974*	NASA-CASE-XNP-01311	c 26	N75-29236* #
NASA-CASE-XMS-01240	c 05	N70-35152* #	NASA-CASE-XMS-06876	c 15	N71-21536*	NASA-CASE-XNP-01318	c 10	N71-23033*
NASA-CASE-XMS-01244-1	c 33	N79-33393* #				NASA-CASE-XNP-01328	c 26	N71-18064*



NASA-CASE-XNP-01383	c 09	N71-10659* #	NASA-CASE-XNP-04732	c 09	N71-20851*	NASA-CASE-XNP-09776	c 09	N69-39929* #
NASA-CASE-XNP-01390	c 28	N70-41275* #	NASA-CASE-XNP-04758	c 03	N71-24605*	NASA-CASE-XNP-09785	c 08	N69-21928* #
NASA-CASE-XNP-01412	c 15	N70-42034* #	NASA-CASE-XNP-04780	c 08	N71-19687*	NASA-CASE-XNP-09802	c 33	N71-15641*
NASA-CASE-XNP-01458	c 04	N78-17031* #	NASA-CASE-XNP-04816	c 06	N69-39936* #	NASA-CASE-XNP-09808	c 09	N71-12518* #
NASA-CASE-XNP-01464	c 03	N71-10728* #	NASA-CASE-XNP-04817	c 14	N71-23225*	NASA-CASE-XNP-09830	c 14	N71-26266*
NASA-CASE-XNP-01466	c 10	N71-26434*	NASA-CASE-XNP-04819	c 08	N71-23295*	NASA-CASE-XNP-09832	c 30	N71-23723*
NASA-CASE-XNP-01472	c 14	N70-41807* #	NASA-CASE-XNP-04969	c 11	N69-27466* #	NASA-CASE-XNP-10007-1	c 46	N74-23068* #
NASA-CASE-XNP-01501	c 21	N70-41930*	NASA-CASE-XNP-05082	c 15	N70-41960* #	NASA-CASE-XNP-10475	c 15	N71-24679*
NASA-CASE-XNP-01567	c 15	N70-41310* #	NASA-CASE-XNP-05219	c 16	N71-15550*	NASA-CASE-XNP-10830	c 07	N71-11281* #
NASA-CASE-XNP-01641	c 15	N71-22997*	NASA-CASE-XNP-05231	c 14	N73-28491* #	NASA-CASE-XNP-10843	c 07	N71-11267* #
NASA-CASE-XNP-01659	c 14	N71-23039*	NASA-CASE-XNP-05254	c 07	N71-20791*	NASA-CASE-XNP-10854	c 10	N71-26331*
NASA-CASE-XNP-01660	c 14	N71-23036*	NASA-CASE-XNP-05297	c 15	N71-23811*	US-PATENT-APPL-SN-003693	c 52	N81-14612* #
NASA-CASE-XNP-01735	c 07	N71-22750*	NASA-CASE-XNP-05381	c 09	N71-20842*	US-PATENT-APPL-SN-006952	c 27	N81-14077* #
NASA-CASE-XNP-01747	c 15	N71-23024*	NASA-CASE-XNP-05382	c 10	N71-23544*	US-PATENT-APPL-SN-007083	c 26	N80-32484* #
NASA-CASE-XNP-01749	c 27	N70-41897* #	NASA-CASE-XNP-05415	c 08	N71-12505* #	US-PATENT-APPL-SN-008207	c 32	N80-23524* #
NASA-CASE-XNP-01753	c 08	N71-22897*	NASA-CASE-XNP-05429	c 26	N71-21824*	US-PATENT-APPL-SN-008208	c 37	N81-17432* #
NASA-CASE-XNP-01848	c 15	N71-28959*	NASA-CASE-XNP-05524	c 33	N71-24876*	US-PATENT-APPL-SN-008209	c 32	N81-25278* #
NASA-CASE-XNP-01855	c 15	N71-28937*	NASA-CASE-XNP-05530	c 14	N73-32321* #	US-PATENT-APPL-SN-008210	c 05	N81-26114* #
NASA-CASE-XNP-01951	c 09	N70-41929* #	NASA-CASE-XNP-05535	c 14	N71-23040*	US-PATENT-APPL-SN-008211	c 74	N81-17887* #
NASA-CASE-XNP-01954	c 28	N71-28850*	NASA-CASE-XNP-05612	c 09	N69-21468* #	US-PATENT-APPL-SN-008212	c 44	N80-24741* #
NASA-CASE-XNP-01959	c 26	N71-23043*	NASA-CASE-XNP-05634	c 15	N71-24834*	US-PATENT-APPL-SN-009886	c 31	N80-32583* #
NASA-CASE-XNP-01960	c 09	N71-23027*	NASA-CASE-XNP-05821	c 03	N71-11056* #	US-PATENT-APPL-SN-009887	c 28	N81-14103* #
NASA-CASE-XNP-01961	c 26	N71-29156*	NASA-CASE-XNP-05975	c 15	N69-23185* #	US-PATENT-APPL-SN-009888	c 37	N81-14320* #
NASA-CASE-XNP-01962	c 32	N70-41370* #	NASA-CASE-XNP-06028	c 09	N71-23189*	US-PATENT-APPL-SN-009889	c 33	N79-17134* #
NASA-CASE-XNP-02029	c 14	N70-41955* #	NASA-CASE-XNP-06031	c 15	N71-15608* #	US-PATENT-APPL-SN-009889	c 33	N81-27396* #
NASA-CASE-XNP-02092	c 15	N70-42033* #	NASA-CASE-XNP-06032	c 09	N69-21926* #	US-PATENT-APPL-SN-011773	c 27	N81-14078* #
NASA-CASE-XNP-02139	c 18	N71-24184*	NASA-CASE-XNP-06234	c 10	N71-27137*	US-PATENT-APPL-SN-014663	c 31	N81-25259* #
NASA-CASE-XNP-02140	c 09	N71-23097*	NASA-CASE-XNP-06503	c 23	N71-29049*	US-PATENT-APPL-SN-014664	c 44	N81-14389* #
NASA-CASE-XNP-02251	c 12	N71-20896*	NASA-CASE-XNP-06505	c 10	N71-24799*	US-PATENT-APPL-SN-015983	c 02	N80-28300* #
NASA-CASE-XNP-02278	c 15	N71-28951*	NASA-CASE-XNP-06506	c 03	N71-11050* #	US-PATENT-APPL-SN-015995	c 08	N81-26152* #
NASA-CASE-XNP-02340	c 23	N69-24332* #	NASA-CASE-XNP-06507	c 09	N71-23548*	US-PATENT-APPL-SN-015996	c 08	N81-24106* #
NASA-CASE-XNP-02341	c 15	N71-21531*	NASA-CASE-XNP-06508	c 18	N69-39895* #	US-PATENT-APPL-SN-017885	c 32	N79-19195* #
NASA-CASE-XNP-02389	c 07	N71-28900*	NASA-CASE-XNP-06509	c 14	N71-23226*	US-PATENT-APPL-SN-017886	c 33	N81-33405* #
NASA-CASE-XNP-02500	c 18	N71-27397*	NASA-CASE-XNP-06510	c 14	N71-23797*	US-PATENT-APPL-SN-017887	c 33	N81-26358* #
NASA-CASE-XNP-02507	c 31	N71-17679*	NASA-CASE-XNP-06611	c 07	N71-26102*	US-PATENT-APPL-SN-017888	c 51	N80-16715* #
NASA-CASE-XNP-02588	c 15	N71-18613* #	NASA-CASE-XNP-06914	c 15	N71-21489*	US-PATENT-APPL-SN-017889	c 02	N79-24958* #
NASA-CASE-XNP-02592	c 24	N71-20518*	NASA-CASE-XNP-06933	c 14	N73-32321* #	US-PATENT-APPL-SN-017890	c 33	N81-15182* #
NASA-CASE-XNP-02595	c 31	N71-21881*	NASA-CASE-XNP-06936	c 15	N71-24695*	US-PATENT-APPL-SN-019541	c 02	N81-14968* #
NASA-CASE-XNP-02654	c 10	N70-42032* #	NASA-CASE-XNP-06937	c 09	N71-19516*	US-PATENT-APPL-SN-023436	c 07	N80-32392* #
NASA-CASE-XNP-02713	c 10	N69-39888* #	NASA-CASE-XNP-06942	c 28	N71-23293*	US-PATENT-APPL-SN-023437	c 62	N81-24779* #
NASA-CASE-XNP-02723	c 07	N70-41680* #	NASA-CASE-XNP-06957	c 14	N71-21088*	US-PATENT-APPL-SN-023439	c 54	N79-20748* #
NASA-CASE-XNP-02748	c 08	N71-22749*	NASA-CASE-XNP-07040	c 08	N71-12500* #	US-PATENT-APPL-SN-023439	c 37	N81-27519* #
NASA-CASE-XNP-02778	c 08	N71-22710*	NASA-CASE-XNP-07169	c 15	N73-32362* #	US-PATENT-APPL-SN-023485	c 33	N81-20352* #
NASA-CASE-XNP-02791	c 07	N71-23026*	NASA-CASE-XNP-07477	c 09	N71-26092*	US-PATENT-APPL-SN-023501	c 33	N82-24418* #
NASA-CASE-XNP-02792	c 14	N71-28958*	NASA-CASE-XNP-07478	c 14	N69-21823* #	US-PATENT-APPL-SN-025162	c 26	N80-28492* #
NASA-CASE-XNP-02839	c 28	N70-41922* #	NASA-CASE-XNP-07481	c 25	N69-21829* #	US-PATENT-APPL-SN-025163	c 35	N81-14287* #
NASA-CASE-XNP-02862-1	c 15	N71-26294*	NASA-CASE-XNP-07659	c 06	N71-22975*	US-PATENT-APPL-SN-025301	c 74	N80-33210* #
NASA-CASE-XNP-02868	c 18	N71-21068*	NASA-CASE-XNP-08124-2	c 06	N73-13129* #	US-PATENT-APPL-SN-027557	c 07	N82-26293* #
NASA-CASE-XNP-02899-1	c 33	N79-21265* #	NASA-CASE-XNP-08124	c 15	N71-27184*	US-PATENT-APPL-SN-027558	c 27	N81-19296* #
NASA-CASE-XNP-02923	c 28	N71-23081*	NASA-CASE-XNP-08274	c 10	N71-13537* #	US-PATENT-APPL-SN-027559	c 36	N81-24422* #
NASA-CASE-XNP-02982	c 31	N70-41855* #	NASA-CASE-XNP-08567	c 09	N71-26000*	US-PATENT-APPL-SN-028300	c 44	N81-17518* #
NASA-CASE-XNP-02983	c 14	N71-21091*	NASA-CASE-XNP-08680	c 14	N71-22995*	US-PATENT-APPL-SN-028301	c 27	N81-17259* #
NASA-CASE-XNP-03063	c 17	N70-41991* #	NASA-CASE-XNP-08832	c 08	N71-12506* #	US-PATENT-APPL-SN-028301	c 27	N81-17262* #
NASA-CASE-XNP-03128	c 10	N71-10676* #	NASA-CASE-XNP-08835-1	c 37	N80-14395* #	US-PATENT-APPL-SN-028301	c 27	N81-24256* #
NASA-CASE-XNP-03134	c 07	N71-23500*	NASA-CASE-XNP-08836	c 09	N71-12515* #	US-PATENT-APPL-SN-030831	c 27	N82-24338* #
NASA-CASE-XNP-03250	c 06	N71-18843*	NASA-CASE-XNP-08837	c 18	N71-16210*	US-PATENT-APPL-SN-030964	c 25	N82-23282* #
NASA-CASE-XNP-03263	c 09	N72-20758* #	NASA-CASE-XNP-08875	c 23	N71-16365*	US-PATENT-APPL-SN-032305	c 74	N79-25876* #
NASA-CASE-XNP-03282	c 28	N71-10618* #	NASA-CASE-XNP-08876	c 10	N71-23099*	US-PATENT-APPL-SN-032307	c 15	N82-24272* #
NASA-CASE-XNP-03332	c 09	N71-11051* #	NASA-CASE-XNP-08877	c 17	N73-28573* #	US-PATENT-APPL-SN-034104	c 44	N81-24519* #
NASA-CASE-XNP-03378	c 03	N71-26726*	NASA-CASE-XNP-08880	c 15	N71-23025*	US-PATENT-APPL-SN-034529	c 08	N81-19130* #
NASA-CASE-XNP-03413	c 18	N71-15688*	NASA-CASE-XNP-08881	c 09	N71-24808*	US-PATENT-APPL-SN-034531	c 24	N79-23142* #
NASA-CASE-XNP-03459-2	c 15	N71-21078*	NASA-CASE-XNP-08882	c 17	N71-28747*	US-PATENT-APPL-SN-037072	c 52	N81-28740* #
NASA-CASE-XNP-03459	c 11	N71-23030*	NASA-CASE-XNP-08897	c 15	N69-39935* #	US-PATENT-APPL-SN-037194	c 25	N81-14016* #
NASA-CASE-XNP-03578	c 09	N73-28084* #	NASA-CASE-XNP-08907	c 23	N71-16101*	US-PATENT-APPL-SN-037560	c 31	N81-33319* #
NASA-CASE-XNP-03623	c 15	N71-21311*	NASA-CASE-XNP-08961	c 15	N71-17694*	US-PATENT-APPL-SN-038980	c 37	N79-23431* #
NASA-CASE-XNP-03637	c 28	N71-24321*	NASA-CASE-XNP-09205	c 23	N71-29123*	US-PATENT-APPL-SN-039031	c 74	N81-29963* #
NASA-CASE-XNP-03692	c 10	N71-20448*	NASA-CASE-XNP-09225	c 14	N71-17657*	US-PATENT-APPL-SN-041142	c 07	N81-14999* #
NASA-CASE-XNP-03744	c 23	N71-15467*	NASA-CASE-XNP-09228	c 14	N69-24333* #	US-PATENT-APPL-SN-041143	c 32	N80-28578* #
NASA-CASE-XNP-03796	c 06	N71-23499*	NASA-CASE-XNP-09450	c 09	N69-27500* #	US-PATENT-APPL-SN-041145	c 36	N82-13415* #
NASA-CASE-XNP-03835	c 23	N71-21882*	NASA-CASE-XNP-09451	c 15	N71-18723*	US-PATENT-APPL-SN-041164	c 15	N81-15179* #
NASA-CASE-XNP-03853	c 03	N75-27127* #	NASA-CASE-XNP-09452	c 10	N71-26754*	US-PATENT-APPL-SN-043911	c 60	N79-27864* #
NASA-CASE-XNP-03878	c 26	N71-10771* #	NASA-CASE-XNP-09453	c 06	N69-27504* #	US-PATENT-APPL-SN-043912	c 25	N82-12166* #
NASA-CASE-XNP-03914	c 09	N71-28810*	NASA-CASE-XNP-09462	c 15	N72-23809* #	US-PATENT-APPL-SN-043913	c 33	N81-19392* #
NASA-CASE-XNP-03916	c 14	N71-23087*	NASA-CASE-XNP-09469	c 08	N71-17584*	US-PATENT-APPL-SN-043942	c 05	N82-26277* #
NASA-CASE-XNP-03918	c 14	N69-24331* #	NASA-CASE-XNP-09572	c 24	N71-25555*	US-PATENT-APPL-SN-043944	c 43	N81-17499* #
NASA-CASE-XNP-03930	c 15	N71-23048*	NASA-CASE-XNP-09698	c 14	N71-15621* #	US-PATENT-APPL-SN-043945	c 54	N81-27806* #
NASA-CASE-XNP-03972	c 06	N71-28808*	NASA-CASE-XNP-09699	c 15	N71-18580*	US-PATENT-APPL-SN-044431	c 44	N81-19558* #
NASA-CASE-XNP-04023	c 08	N71-22707*	NASA-CASE-XNP-09701	c 14	N71-24607*	US-PATENT-APPL-SN-044432	c 06	N82-16075* #
NASA-CASE-XNP-04067	c 14	N71-15622* #	NASA-CASE-XNP-09702	c 14	N71-17654*	US-PATENT-APPL-SN-046739	c 33	N82-24419* #
NASA-CASE-XNP-04111	c 28	N71-21822*	NASA-CASE-XNP-09704	c 15	N71-18392*	US-PATENT-APPL-SN-051269	c 24	N82-24296* #
NASA-CASE-XNP-04124	c 17	N71-24830*	NASA-CASE-XNP-09750	c 06	N69-39937* #	US-PATENT-APPL-SN-051270	c 47	N82-24779* #
NASA-CASE-XNP-04148	c 14	N71-15599* #	NASA-CASE-XNP-09752	c 14	N69-21541* #	US-PATENT-APPL-SN-051271	c 33	N79-25314* #
NASA-CASE-XNP-04161	c 08	N70-34675* #	NASA-CASE-XNP-09755	c 15	N71-17654*	US-PATENT-APPL-SN-051272	c 33	N81-27385* #
NASA-CASE-XNP-04162-1	c 25	N72-24753* #	NASA-CASE-XNP-09759	c 12	N71-18615*	US-PATENT-APPL-SN-051274	c 52	N81-20703* #
NASA-CASE-XNP-04167-2	c 36	N77-18416* #	NASA-CASE-XNP-09763	c 27	N71-18392*	US-PATENT-APPL-SN-051275	c 54	N81-24724* #
NASA-CASE-XNP-04167-3	c 07	N69-39736* #	NASA-CASE-XNP-09768	c 14	N69-39937* #	US-PATENT-APPL-SN-051276	c 33	N81-24338* #
NASA-CASE-XNP-04180	c 09	N69-24329* #	NASA-CASE-XNP-09770-2	c 14	N69-21541* #	US-PATENT-APPL-SN-051277	c 32	N80-32604* #
NASA-CASE-XNP-04183	c 14	N73-32325* #	NASA-CASE-XNP-09770-3	c 46	N74-23069* #	US-PATENT-APPL-SN-051278	c 33	N81-26359* #
NASA-CASE-XNP-04231	c 17	N71-26773*	NASA-CASE-XNP-09771	c 08	N71-24891*	US-PATENT-APPL-SN-051279	c 34	N81-26402* #
NASA-CASE-XNP-04262-2	c 03	N69-21337* #	NASA-CASE-XNP-09775	c 14	N71-20461*	US-PATENT-APPL-SN-051280	c 44	N82-24640* #
NASA-CASE-XNP-04264	c 17	N71-23046*		c 09	N71-12518* #	US-PATENT-APPL-SN-051281	c 33	N81-33404* #
NASA-CASE-XNP-04338	c 17	N71-29137*		c 15	N72-22483* #	US-PATENT-APPL-SN-051282	c 09	N82-24212* #
NASA-CASE-XNP-04389	c 28	N71-20942*		c 11	N71-27036*	US-PATENT-APPL-SN-051283	c 35	N81-19426* #
NASA-CASE-XNP-04623	c 10	N71-26103*		c 15	N71-20440*	US-PATENT-APPL-SN-051284	c 31	N81-19343* #
NASA-CASE-XNP-04731	c 15	N71-24042*		c 09	N71-24841*	US-PATENT-APPL-SN-051285	c 32	N82-23376* #



US-PATENT-APPL-SN-053652	c 33	N82-18494* #	US-PATENT-APPL-SN-108824	c 31	N73-13898* #	US-PATENT-APPL-SN-134658	c 15	N73-28515* #
US-PATENT-APPL-SN-054501	c 23	N82-16174* #	US-PATENT-APPL-SN-109789	c 09	N70-34596* #	US-PATENT-APPL-SN-134782	c 09	N70-36494* #
US-PATENT-APPL-SN-057465	c 37	N81-17433* #	US-PATENT-APPL-SN-110402	c 09	N72-27226* #	US-PATENT-APPL-SN-134855	c 44	N81-24521* #
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US-PATENT-APPL-SN-155596	c 15	N73-32361* #	US-PATENT-APPL-SN-180381	c 09	N70-38998* #	US-PATENT-APPL-SN-198285	c 54	N81-15699* #
US-PATENT-APPL-SN-155598	c 15	N73-28516* #	US-PATENT-APPL-SN-180382	c 21	N70-35089* #	US-PATENT-APPL-SN-198289	c 09	N73-13208* #
US-PATENT-APPL-SN-156724	c 21	N73-13643* #	US-PATENT-APPL-SN-180384	c 28	N70-38645* #	US-PATENT-APPL-SN-198355	c 14	N73-32326* #
US-PATENT-APPL-SN-156725	c 14	N73-27377* #	US-PATENT-APPL-SN-180391	c 11	N70-38675* #	US-PATENT-APPL-SN-198362	c 05	N72-15098* #
US-PATENT-APPL-SN-156778	c 17	N72-28535* #	US-PATENT-APPL-SN-180392	c 28	N70-38249* #	US-PATENT-APPL-SN-198379	c 14	N73-28489* #
US-PATENT-APPL-SN-156790	c 25	N82-29371* #	US-PATENT-APPL-SN-180394	c 09	N71-13530* #	US-PATENT-APPL-SN-198472	c 15	N73-32359* #
US-PATENT-APPL-SN-157150	c 37	N80-26659* #	US-PATENT-APPL-SN-180395	c 15	N70-38603* #	US-PATENT-APPL-SN-198763	c 27	N74-12812* #
US-PATENT-APPL-SN-158183	c 32	N80-26571* #	US-PATENT-APPL-SN-180396	c 15	N70-38947* #	US-PATENT-APPL-SN-198763	c 31	N74-18124* #
US-PATENT-APPL-SN-158914	c 11	N70-36913* #	US-PATENT-APPL-SN-180473	c 11	N70-38202* #	US-PATENT-APPL-SN-198885	c 31	N74-32920* #
US-PATENT-APPL-SN-158916	c 05	N70-41819* #	US-PATENT-APPL-SN-180683	c 28	N73-27699* #	US-PATENT-APPL-SN-198919	c 05	N73-27062* #
US-PATENT-APPL-SN-158904	c 11	N70-38196* #	US-PATENT-APPL-SN-180683	c 10	N73-25241* #	US-PATENT-APPL-SN-199102	c 25	N71-29184* #
US-PATENT-APPL-SN-158957	c 05	N73-26072* #	US-PATENT-APPL-SN-181023	c 14	N73-27378* #	US-PATENT-APPL-SN-199299	c 14	N70-40239* #
US-PATENT-APPL-SN-159966	c 31	N73-26876* #	US-PATENT-APPL-SN-181828	c 15	N73-26472* #	US-PATENT-APPL-SN-19971	c 09	N70-33312* #
US-PATENT-APPL-SN-160093	c 04	N78-17031* #	US-PATENT-APPL-SN-181829	c 07	N73-26117* #	US-PATENT-APPL-SN-199765	c 33	N81-12330* #
US-PATENT-APPL-SN-160859	c 32	N73-26910* #	US-PATENT-APPL-SN-182033	c 02	N70-34858* #	US-PATENT-APPL-SN-199766	c 36	N81-12407* #
US-PATENT-APPL-SN-160860	c 18	N73-32437* #	US-PATENT-APPL-SN-182399	c 31	N70-38010* #	US-PATENT-APPL-SN-199768	c 33	N81-15195* #
US-PATENT-APPL-SN-161028	c 14	N73-19420* #	US-PATENT-APPL-SN-182692	c 33	N73-27796* #	US-PATENT-APPL-SN-199769	c 27	N81-15107* #
US-PATENT-APPL-SN-161253	c 27	N80-26447* #	US-PATENT-APPL-SN-182696	c 07	N73-28013* #	US-PATENT-APPL-SN-199957	c 26	N82-31505* #
US-PATENT-APPL-SN-161254	c 27	N82-28441* #	US-PATENT-APPL-SN-182698	c 15	N70-36535* #	US-PATENT-APPL-SN-200040	c 10	N73-26229* #
US-PATENT-APPL-SN-161255	c 28	N81-24280* #	US-PATENT-APPL-SN-182699	c 21	N70-36938* #	US-PATENT-APPL-SN-200634	c 52	N74-10975* #
US-PATENT-APPL-SN-161256	c 44	N82-32841* #	US-PATENT-APPL-SN-182699	c 15	N70-38620* #	US-PATENT-APPL-SN-200717	c 26	N73-26751* #
US-PATENT-APPL-SN-161257	c 37	N80-26660* #	US-PATENT-APPL-SN-182699	c 28	N70-38504* #	US-PATENT-APPL-SN-200762	c 34	N81-12363* #
US-PATENT-APPL-SN-162100	c 33	N74-14939* #	US-PATENT-APPL-SN-182789	c 37	N82-32730* #	US-PATENT-APPL-SN-200762	c 07	N73-14130* #
US-PATENT-APPL-SN-162101	c 14	N73-24473* #	US-PATENT-APPL-SN-182880	c 37	N81-12422* #	US-PATENT-APPL-SN-200770	c 09	N73-19234* #
US-PATENT-APPL-SN-162230	c 26	N72-28761* #	US-PATENT-APPL-SN-182881	c 18	N81-12156* #	US-PATENT-APPL-SN-200770	c 03	N73-20040* #
US-PATENT-APPL-SN-162380	c 36	N74-21091* #	US-PATENT-APPL-SN-182977	c 39	N74-13131* #	US-PATENT-APPL-SN-201700	c 09	N79-21084* #
US-PATENT-APPL-SN-163151	c 74	N75-25706* #	US-PATENT-APPL-SN-183240	c 16	N73-13489* #	US-PATENT-APPL-SN-201782	c 33	N74-17930* #
US-PATENT-APPL-SN-163152	c 17	N73-27446* #	US-PATENT-APPL-SN-183707	c 06	N73-30098* #	US-PATENT-APPL-SN-201904	c 15	N73-19458* #
US-PATENT-APPL-SN-163837	c 47	N80-26992* #	US-PATENT-APPL-SN-183977	c 23	N80-31472* #	US-PATENT-APPL-SN-201904	c 15	N73-30458* #
US-PATENT-APPL-SN-163838	c 23	N82-28353* #	US-PATENT-APPL-SN-183978	c 28	N70-38505* #	US-PATENT-APPL-SN-201904	c 37	N74-15128* #
US-PATENT-APPL-SN-163839	c 23	N80-26386* #	US-PATENT-APPL-SN-184090	c 15	N70-38020* #	US-PATENT-APPL-SN-202024	c 37	N74-21064* #
US-PATENT-APPL-SN-163840	c 37	N81-33482* #	US-PATENT-APPL-SN-18427	c 14	N73-32327* #	US-PATENT-APPL-SN-202029	c 14	N70-34156* #
US-PATENT-APPL-SN-164428	c 09	N70-35440* #	US-PATENT-APPL-SN-184649	c 09	N72-23172* #	US-PATENT-APPL-SN-202030	c 11	N70-34786* #
US-PATENT-APPL-SN-164617	c 06	N81-17057* #	US-PATENT-APPL-SN-184649	c 07	N70-36911* #	US-PATENT-APPL-SN-202228	c 31	N71-10747* #
US-PATENT-APPL-SN-165910	c 32	N80-32607* #	US-PATENT-APPL-SN-185865	c 06	N73-27980* #	US-PATENT-APPL-SN-202250	c 34	N82-11399* #
US-PATENT-APPL-SN-166487	c 11	N73-32152* #	US-PATENT-APPL-SN-185867	c 52	N80-33081* #	US-PATENT-APPL-SN-202769	c 19	N74-21015* #
US-PATENT-APPL-SN-166541	c 14	N73-13415* #	US-PATENT-APPL-SN-185869	c 44	N82-26777* #	US-PATENT-APPL-SN-203271	c 05	N73-27941* #
US-PATENT-APPL-SN-166696	c 15	N70-34249* #	US-PATENT-APPL-SN-186700	c 71	N82-16800* #	US-PATENT-APPL-SN-203405	c 51	N74-15778* #
US-PATENT-APPL-SN-166970	c 15	N70-36409* #	US-PATENT-APPL-SN-186881	c 32	N74-12912* #	US-PATENT-APPL-SN-203411	c 02	N73-26006* #
US-PATENT-APPL-SN-167719	c 16	N73-33397* #	US-PATENT-APPL-SN-187106	c 74	N82-30071* #	US-PATENT-APPL-SN-20370	c 28	N70-38197* #
US-PATENT-APPL-SN-168008	c 14	N72-22445* #	US-PATENT-APPL-SN-187143	c 74	N80-34251* #	US-PATENT-APPL-SN-204015	c 33	N70-34812* #
US-PATENT-APPL-SN-168650	c 02	N70-34856* #	US-PATENT-APPL-SN-187262	c 36	N74-13205* #	US-PATENT-APPL-SN-205047	c 33	N79-33933* #
US-PATENT-APPL-SN-168650	c 14	N73-13416* #	US-PATENT-APPL-SN-187365	c 15	N73-27406* #	US-PATENT-APPL-SN-205047	c 09	N70-38201* #
US-PATENT-APPL-SN-168943	c 54	N82-26987* #	US-PATENT-APPL-SN-187446	c 35	N74-15127* #	US-PATENT-APPL-SN-205470	c 15	N73-32360* #
US-PATENT-APPL-SN-168944	c 37	N82-32731* #	US-PATENT-APPL-SN-18776	c 31	N70-37924* #	US-PATENT-APPL-SN-205675	c 08	N71-18752* #
US-PATENT-APPL-SN-168995	c 33	N80-32651* #	US-PATENT-APPL-SN-18780	c 28	N70-33284* #	US-PATENT-APPL-SN-206266	c 14	N73-30386* #
US-PATENT-APPL-SN-169671	c 10	N73-30205* #	US-PATENT-APPL-SN-188160	c 12	N70-33305* #	US-PATENT-APPL-SN-206279	c 76	N74-20329* #
US-PATENT-APPL-SN-169692	c 34	N74-30608* #	US-PATENT-APPL-SN-188594	c 74	N82-19029* #	US-PATENT-APPL-SN-206279	c 76	N75-25730* #
US-PATENT-APPL-SN-169977	c 14	N70-34794* #	US-PATENT-APPL-SN-188836	c 15	N74-34967* #	US-PATENT-APPL-SN-206506	c 02	N73-26005* #
US-PATENT-APPL-SN-170440	c 15	N73-13462* #	US-PATENT-APPL-SN-188927	c 35	N74-34857* #	US-PATENT-APPL-SN-206698	c 05	N76-29217* #
US-PATENT-APPL-SN-170544	c 36	N77-19416* #	US-PATENT-APPL-SN-188928	c 08	N73-32081* #	US-PATENT-APPL-SN-207211	c 33	N82-24422* #
US-PATENT-APPL-SN-170680	c 30	N74-15652* #	US-PATENT-APPL-SN-189234	c 37	N74-13178* #	US-PATENT-APPL-SN-208093	c 15	N73-30459* #
US-PATENT-APPL-SN-170681	c 14	N73-25240* #	US-PATENT-APPL-SN-189290	c 24	N81-12174* #	US-PATENT-APPL-SN-209478	c 07	N73-30113* #
US-PATENT-APPL-SN-17101	c 28	N72-18766* #	US-PATENT-APPL-SN-189375	c 14	N73-27379* #	US-PATENT-APPL-SN-209478	c 08	N81-33210* #
US-PATENT-APPL-SN-171928	c 33	N82-26570* #	US-PATENT-APPL-SN-189438	c 18	N73-14584* #	US-PATENT-APPL-SN-209618	c 07	N70-38200* #
US-PATENT-APPL-SN-171933	c 37	N82-12441* #	US-PATENT-APPL-SN-189648	c 35	N76-15431* #	US-PATENT-APPL-SN-209618	c 15	N70-34850* #
US-PATENT-APPL-SN-171934	c 35	N82-26628* #	US-PATENT-APPL-SN-18982	c 32	N70-36536* #	US-PATENT-APPL-SN-209618	c 28	N73-24783* #
US-PATENT-APPL-SN-172098	c 33	N80-29583* #	US-PATENT-APPL-SN-190316	c 28	N72-11708* #	US-PATENT-APPL-SN-210491	c 15	N72-17453* #
US-PATENT-APPL-SN-172099	c 32	N82-27558* #	US-PATENT-APPL-SN-191301	c 17	N73-32414* #	US-PATENT-APPL-SN-210498	c 33	N75-19520* #
US-PATENT-APPL-SN-172100	c 27	N82-33520* #	US-PATENT-APPL-SN-191744	c 25	N74-12813* #	US-PATENT-APPL-SN-210506	c 33	N75-25041* #
US-PATENT-APPL-SN-172459	c 06	N73-16106* #	US-PATENT-APPL-SN-191746	c 33	N82-29538* #	US-PATENT-APPL-SN-211332	c 08	N70-40125* #
US-PATENT-APPL-SN-172727	c 33	N81-26360* #	US-PATENT-APPL-SN-191748	c 26	N81-16209* #	US-PATENT-APPL-SN-211411	c 36	N81-15350* #
US-PATENT-APPL-SN-172807	c 07	N73-28012* #	US-PATENT-APPL-SN-192016	c 26	N82-30371* #	US-PATENT-APPL-SN-211464	c 02	N81-19016* #
US-PATENT-APPL-SN-173081	c 28	N70-36806* #	US-PATENT-APPL-SN-192101	c 35	N82-31659* #	US-PATENT-APPL-SN-212028	c 35	N81-19428* #
US-PATENT-APPL-SN-173178	c 33	N77-21315* #	US-PATENT-APPL-SN-192141	c 03	N70-36778* #	US-PATENT-APPL-SN-212165	c 35	N81-19429* #
US-PATENT-APPL-SN-173185	c 23	N73-13660* #	US-PATENT-APPL-SN-192803	c 10	N73-20254* #	US-PATENT-APPL-SN-212173	c 02	N74-10034* #
US-PATENT-APPL-SN-173190	c 05	N73-32015* #	US-PATENT-APPL-SN-192803	c 07	N73-24176* #	US-PATENT-APPL-SN-212173	c 11	N73-20267* #
US-PATENT-APPL-SN-173518	c 60	N82-29013* #	US-PATENT-APPL-SN-192803	c 07	N73-22076* #	US-PATENT-APPL-SN-212173	c 28	N70-36910* #
US-PATENT-APPL-SN-173519	c 44	N82-26776* #	US-PATENT-APPL-SN-192803	c 35	N76-16391* #	US-PATENT-APPL-SN-212173	c 09	N73-14214* #
US-PATENT-APPL-SN-173520	c 37	N80-29705* #	US-PATENT-APPL-SN-193456	c 23	N73-30665* #	US-PATENT-APPL-SN-212173	c 14	N73-25460* #



US-PATENT-APPL-SN-212977	c 15	N73-30460* #	US-PATENT-APPL-SN-233269	c 76	N81-19944* #	US-PATENT-APPL-SN-247055	c 37	N74-11300* #
US-PATENT-APPL-SN-213004	c 14	N73-19421* #	US-PATENT-APPL-SN-233270	c 76	N82-30105* #	US-PATENT-APPL-SN-247090	c 37	N74-18128* #
US-PATENT-APPL-SN-213836	c 15	N70-38601* #	US-PATENT-APPL-SN-233271	c 52	N81-24716* #	US-PATENT-APPL-SN-247136	c 14	N71-30265* #
US-PATENT-APPL-SN-213949	c 07	N73-20175* #	US-PATENT-APPL-SN-233272	c 37	N81-19457* #	US-PATENT-APPL-SN-247419	c 14	N70-36907* #
US-PATENT-APPL-SN-214006	c 37	N74-18126* #	US-PATENT-APPL-SN-233519	c 74	N81-19899* #	US-PATENT-APPL-SN-247423	c 01	N71-13410* #
US-PATENT-APPL-SN-214084	c 37	N74-18123* #	US-PATENT-APPL-SN-233587	c 20	N74-13502* #	US-PATENT-APPL-SN-247434	c 25	N76-29379* #
US-PATENT-APPL-SN-214086	c 14	N73-30395* #	US-PATENT-APPL-SN-233743	c 16	N72-22520* #	US-PATENT-APPL-SN-247434	c 25	N76-27383* #
US-PATENT-APPL-SN-214089	c 35	N74-21018* #	US-PATENT-APPL-SN-234222	c 37	N74-13179* #	US-PATENT-APPL-SN-247481	c 05	N73-26071* #
US-PATENT-APPL-SN-214361	c 35	N81-16427* #	US-PATENT-APPL-SN-234223	c 44	N81-24525* #	US-PATENT-APPL-SN-248469	c 14	N73-32318* #
US-PATENT-APPL-SN-21508	c 33	N81-22279* #	US-PATENT-APPL-SN-234244	c 39	N81-24470* #	US-PATENT-APPL-SN-248471	c 05	N74-27902* #
US-PATENT-APPL-SN-21644	c 08	N72-20176* #	US-PATENT-APPL-SN-234568	c 36	N81-19439* #	US-PATENT-APPL-SN-248744	c 31	N74-27902* #
US-PATENT-APPL-SN-216710	c 05	N72-22092* #	US-PATENT-APPL-SN-235162	c 28	N70-34788* #	US-PATENT-APPL-SN-248745	c 05	N81-24047* #
US-PATENT-APPL-SN-216711	c 12	N70-38997* #	US-PATENT-APPL-SN-235268	c 08	N71-12501* #	US-PATENT-APPL-SN-248746	c 18	N81-24164* #
US-PATENT-APPL-SN-216939	c 03	N70-34157* #	US-PATENT-APPL-SN-235269	c 26	N73-32571* #	US-PATENT-APPL-SN-248746	c 37	N81-24446* #
US-PATENT-APPL-SN-217213	c 14	N70-40400* #	US-PATENT-APPL-SN-235295	c 36	N74-15145* #	US-PATENT-APPL-SN-248761	c 15	N72-27360* #
US-PATENT-APPL-SN-21732	c 09	N74-11301* #	US-PATENT-APPL-SN-235323	c 09	N73-30181* #	US-PATENT-APPL-SN-248985	c 03	N71-29129* #
US-PATENT-APPL-SN-217336	c 15	N70-26819* #	US-PATENT-APPL-SN-235338	c 09	N73-30185* #	US-PATENT-APPL-SN-249304	c 09	N81-27121* #
US-PATENT-APPL-SN-217336	c 27	N82-29456* #	US-PATENT-APPL-SN-235363	c 07	N72-21117* #	US-PATENT-APPL-SN-249537	c 14	N71-10797* #
US-PATENT-APPL-SN-218585	c 27	N82-24340* #	US-PATENT-APPL-SN-235588	c 71	N74-31148* #	US-PATENT-APPL-SN-249539	c 28	N71-15658* #
US-PATENT-APPL-SN-218586	c 36	N81-22344* #	US-PATENT-APPL-SN-235588	c 74	N81-24907* #	US-PATENT-APPL-SN-249540	c 15	N70-34881* #
US-PATENT-APPL-SN-218587	c 27	N82-28440* #	US-PATENT-APPL-SN-235796	c 28	N71-28928* #	US-PATENT-APPL-SN-249542	c 28	N70-41576* #
US-PATENT-APPL-SN-218588	c 27	N82-33521* #	US-PATENT-APPL-SN-235797	c 35	N82-28604* #	US-PATENT-APPL-SN-250451	c 08	N70-34787* #
US-PATENT-APPL-SN-218965	c 10	N73-32145* #	US-PATENT-APPL-SN-235866	c 44	N81-19561* #	US-PATENT-APPL-SN-250567	c 33	N71-24876* #
US-PATENT-APPL-SN-21906	c 09	N72-17157* #	US-PATENT-APPL-SN-235867	c 52	N81-33804* #	US-PATENT-APPL-SN-250766	c 07	N73-30115* #
US-PATENT-APPL-SN-219435	c 24	N74-27035* #	US-PATENT-APPL-SN-235868	c 24	N81-19230* #	US-PATENT-APPL-SN-250974	c 31	N71-15664* #
US-PATENT-APPL-SN-219436	c 15	N72-21489* #	US-PATENT-APPL-SN-235957	c 34	N82-24449* #	US-PATENT-APPL-SN-251009	c 33	N81-24348* #
US-PATENT-APPL-SN-219590	c 06	N73-32030* #	US-PATENT-APPL-SN-235962	c 14	N72-27376* #	US-PATENT-APPL-SN-251449	c 07	N70-40083* #
US-PATENT-APPL-SN-219640	c 74	N81-16882* #	US-PATENT-APPL-SN-236052	c 36	N74-11313* #	US-PATENT-APPL-SN-251451	c 09	N70-35425* #
US-PATENT-APPL-SN-219677	c 44	N82-31764* #	US-PATENT-APPL-SN-236281	c 14	N72-25428* #	US-PATENT-APPL-SN-251609	c 05	N73-30078* #
US-PATENT-APPL-SN-219678	c 44	N82-29709* #	US-PATENT-APPL-SN-236285	c 09	N73-20232* #	US-PATENT-APPL-SN-251621	c 16	N73-32391* #
US-PATENT-APPL-SN-219680	c 27	N82-28442* #	US-PATENT-APPL-SN-236748	c 08	N73-26175* #	US-PATENT-APPL-SN-251752	c 24	N74-30001* #
US-PATENT-APPL-SN-219681	c 24	N82-29362* #	US-PATENT-APPL-SN-236749	c 14	N70-40157* #	US-PATENT-APPL-SN-251755	c 28	N70-39895* #
US-PATENT-APPL-SN-219722	c 03	N75-30132* #	US-PATENT-APPL-SN-236795	c 15	N70-40180* #	US-PATENT-APPL-SN-252259	c 33	N70-34545* #
US-PATENT-APPL-SN-219806	c 07	N74-28226* #	US-PATENT-APPL-SN-237029	c 44	N74-19692* #	US-PATENT-APPL-SN-253249	c 33	N74-11050* #
US-PATENT-APPL-SN-220212	c 33	N81-16384* #	US-PATENT-APPL-SN-237029	c 09	N73-32108* #	US-PATENT-APPL-SN-253405	c 10	N73-26228* #
US-PATENT-APPL-SN-220213	c 37	N81-16469* #	US-PATENT-APPL-SN-237491	c 05	N75-12930* #	US-PATENT-APPL-SN-253725	c 35	N74-13129* #
US-PATENT-APPL-SN-220214	c 44	N82-29710* #	US-PATENT-APPL-SN-237694	c 35	N74-11284* #	US-PATENT-APPL-SN-253774	c 25	N70-36946* #
US-PATENT-APPL-SN-220251	c 37	N74-15125* #	US-PATENT-APPL-SN-238047	c 33	N74-12951* #	US-PATENT-APPL-SN-254173	c 35	N75-13213* #
US-PATENT-APPL-SN-220274	c 31	N72-20840* #	US-PATENT-APPL-SN-238263	c 35	N74-10415* #	US-PATENT-APPL-SN-254177	c 10	N73-26230* #
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US-PATENT-APPL-SN-276599	c 74	N81-19896* #	US-PATENT-APPL-SN-293739	c 35	N74-28097* #	US-PATENT-APPL-SN-3151	c 05	N72-27102* #
US-PATENT-APPL-SN-276748	c 36	N82-10390* #	US-PATENT-APPL-SN-294727	c 73	N77-18891* #	US-PATENT-APPL-SN-315278	c 51	N82-12739* #
US-PATENT-APPL-SN-276749	c 33	N81-27403* #	US-PATENT-APPL-SN-294738	c 73	N78-28913* #	US-PATENT-APPL-SN-315582	c 74	N82-19030* #
US-PATENT-APPL-SN-276750	c 31	N81-27328* #	US-PATENT-APPL-SN-295855	c 23	N71-17802* #	US-PATENT-APPL-SN-315583	c 33	N82-12346* #
US-PATENT-APPL-SN-277404	c 05	N70-39922* #	US-PATENT-APPL-SN-296622	c 44	N76-31666* #	US-PATENT-APPL-SN-315584	c 28	N82-12241* #
US-PATENT-APPL-SN-277436	c 37	N74-25968* #	US-PATENT-APPL-SN-296679	c 26	N71-18064* #	US-PATENT-APPL-SN-315585	c 33	N82-12345* #
US-PATENT-APPL-SN-277833	c 03	N70-41580* #	US-PATENT-APPL-SN-297127	c 33	N74-27705* #	US-PATENT-APPL-SN-315586	c 73	N82-12916* #
US-PATENT-APPL-SN-277904	c 28	N74-27425* #	US-PATENT-APPL-SN-297128	c 32	N74-26654* #	US-PATENT-APPL-SN-315587	c 28	N82-12240* #
US-PATENT-APPL-SN-277961	c 33	N70-36617* #	US-PATENT-APPL-SN-297436	c 33	N79-11314* #	US-PATENT-APPL-SN-315588	c 05	N82-18203* #
US-PATENT-APPL-SN-278790	c 15	N70-34664* #	US-PATENT-APPL-SN-297486	c 34	N82-10359* #	US-PATENT-APPL-SN-316477	c 18	N71-10772* #
US-PATENT-APPL-SN-2792	c 14	N70-33386* #	US-PATENT-APPL-SN-297487	c 24	N82-11118* #	US-PATENT-APPL-SN-316618	c 07	N74-15453* #
US-PATENT-APPL-SN-279646	c 08	N71-21042* #	US-PATENT-APPL-SN-297488	c 34	N82-24448* #	US-PATENT-APPL-SN-31702	c 16	N73-16536* #
US-PATENT-APPL-SN-280029	c 35	N74-15126* #	US-PATENT-APPL-SN-297524	c 33	N82-12349* #	US-PATENT-APPL-SN-31703	c 09	N72-21244* #
US-PATENT-APPL-SN-280031	c 26	N73-26752* #	US-PATENT-APPL-SN-298156	c 37	N75-13261* #	US-PATENT-APPL-SN-317310	c 36	N77-25502* #
US-PATENT-APPL-SN-280032	c 35	N74-15093* #	US-PATENT-APPL-SN-298156	c 26	N75-19408* #	US-PATENT-APPL-SN-317389	c 18	N70-41583* #
US-PATENT-APPL-SN-280151	c 76	N81-30012* #	US-PATENT-APPL-SN-298157	c 33	N74-21850* #	US-PATENT-APPL-SN-317391	c 15	N71-15968* #
US-PATENT-APPL-SN-280153	c 51	N81-29728* #	US-PATENT-APPL-SN-298799	c 14	N71-15962* #	US-PATENT-APPL-SN-317567	c 36	N75-15029* #
US-PATENT-APPL-SN-280305	c 34	N74-23039* #	US-PATENT-APPL-SN-298800	c 14	N70-34705* #	US-PATENT-APPL-SN-317877	c 25	N82-12168* #
US-PATENT-APPL-SN-280362	c 14	N71-28935* #	US-PATENT-APPL-SN-299042	c 15	N71-15918* #	US-PATENT-APPL-SN-318151	c 75	N74-30156* #
US-PATENT-APPL-SN-280390	c 37	N74-15128* #	US-PATENT-APPL-SN-29917	c 15	N73-13465* #	US-PATENT-APPL-SN-318152	c 52	N74-20728* #
US-PATENT-APPL-SN-280580	c 12	N71-21089* #	US-PATENT-APPL-SN-29917	c 26	N74-10521* #	US-PATENT-APPL-SN-318357	c 35	N74-21019* #
US-PATENT-APPL-SN-280776	c 14	N70-40273* #	US-PATENT-APPL-SN-29917	c 37	N74-13179* #	US-PATENT-APPL-SN-318358	c 27	N74-27037* #
US-PATENT-APPL-SN-280777	c 08	N70-41961* #	US-PATENT-APPL-SN-29979	c 09	N75-15662* #	US-PATENT-APPL-SN-318443	c 03	N70-34667* #
US-PATENT-APPL-SN-281069	c 14	N70-35394* #	US-PATENT-APPL-SN-300113	c 33	N70-33344* #	US-PATENT-APPL-SN-318848	c 35	N77-14408* #
US-PATENT-APPL-SN-28175	c 21	N70-33279* #	US-PATENT-APPL-SN-300712	c 15	N70-35407* #	US-PATENT-APPL-SN-31885	c 10	N72-17172* #
US-PATENT-APPL-SN-281875	c 25	N74-18551* #	US-PATENT-APPL-SN-300957	c 33	N71-29053* #	US-PATENT-APPL-SN-319150	c 33	N75-19519* #
US-PATENT-APPL-SN-281876	c 52	N74-20726* #	US-PATENT-APPL-SN-301039	c 37	N74-27903* #	US-PATENT-APPL-SN-319410	c 37	N74-20063* #
US-PATENT-APPL-SN-281908	c 35	N74-15146* #	US-PATENT-APPL-SN-301075	c 34	N82-10358* #	US-PATENT-APPL-SN-319892	c 07	N71-10609* #
US-PATENT-APPL-SN-282129	c 25	N75-12086* #	US-PATENT-APPL-SN-301077	c 33	N82-10324* #	US-PATENT-APPL-SN-319893	c 14	N70-41847* #
US-PATENT-APPL-SN-282191	c 24	N81-29184* #	US-PATENT-APPL-SN-301078	c 05	N82-25240* #	US-PATENT-APPL-SN-319894	c 03	N71-11053* #
US-PATENT-APPL-SN-282191	c 35	N81-31529* #	US-PATENT-APPL-SN-301417	c 71	N74-21014* #	US-PATENT-APPL-SN-319905	c 14	N71-10781* #
US-PATENT-APPL-SN-282192	c 36	N81-29415* #	US-PATENT-APPL-SN-301418	c 52	N76-29894* #	US-PATENT-APPL-SN-320233	c 33	N71-15625* #
US-PATENT-APPL-SN-282298	c 44	N81-29531* #	US-PATENT-APPL-SN-301419	c 34	N76-17317* #	US-PATENT-APPL-SN-320595	c 26	N70-40015* #
US-PATENT-APPL-SN-28235	c 10	N72-17171* #	US-PATENT-APPL-SN-301683	c 07	N71-15907* #	US-PATENT-APPL-SN-320621	c 27	N82-26463* #
US-PATENT-APPL-SN-282817	c 15	N70-40156* #	US-PATENT-APPL-SN-302681	c 37	N75-12326* #	US-PATENT-APPL-SN-321179	c 27	N74-21156* #
US-PATENT-APPL-SN-282818	c 14	N71-14996* #	US-PATENT-APPL-SN-302749	c 14	N70-40201* #	US-PATENT-APPL-SN-322180	c 05	N76-29217* #
US-PATENT-APPL								



US-PATENT-APPL-SN-322545	c 14	N71-10774* #	US-PATENT-APPL-SN-342944	c 76	N82-23031* #	US-PATENT-APPL-SN-361907	c 35	N74-27865* #
US-PATENT-APPL-SN-322565	c 37	N75-27376* #	US-PATENT-APPL-SN-343308	c 19	N74-29410* #	US-PATENT-APPL-SN-362145	c 32	N75-26194* #
US-PATENT-APPL-SN-322997	c 37	N75-15992* #	US-PATENT-APPL-SN-343425	c 11	N70-35383* #	US-PATENT-APPL-SN-362146	c 33	N75-18479* #
US-PATENT-APPL-SN-322997	c 24	N79-25143* #	US-PATENT-APPL-SN-343462	c 07	N71-20814* #	US-PATENT-APPL-SN-362261	c 14	N73-32325* #
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US-PATENT-APPL-SN-32306	c 33	N79-24260* #	US-PATENT-APPL-SN-343760	c 07	N71-28979* #	US-PATENT-APPL-SN-363130	c 25	N81-19244* #
US-PATENT-APPL-SN-323182	c 03	N70-41864* #	US-PATENT-APPL-SN-344410	c 07	N74-33218* #	US-PATENT-APPL-SN-363348	c 05	N70-41581* #
US-PATENT-APPL-SN-324029	c 32	N74-27612* #	US-PATENT-APPL-SN-345372	c 33	N74-22814* #	US-PATENT-APPL-SN-363653	c 07	N70-41331* #
US-PATENT-APPL-SN-32496	c 15	N70-37925* #	US-PATENT-APPL-SN-346356	c 14	N70-41676* #	US-PATENT-APPL-SN-363654	c 07	N70-41372* #
US-PATENT-APPL-SN-325082	c 25	N82-22329* #	US-PATENT-APPL-SN-346361	c 37	N74-21064* #	US-PATENT-APPL-SN-363691	c 30	N76-14190* #
US-PATENT-APPL-SN-325083	c 33	N82-26575* #	US-PATENT-APPL-SN-346372	c 35	N75-12270* #	US-PATENT-APPL-SN-364041	c 23	N82-26573* #
US-PATENT-APPL-SN-325784	c 24	N76-14204* #	US-PATENT-APPL-SN-346483	c 37	N74-32921* #	US-PATENT-APPL-SN-364072	c 24	N82-26386* #
US-PATENT-APPL-SN-325885	c 35	N82-25484* #	US-PATENT-APPL-SN-346483	c 37	N76-15461* #	US-PATENT-APPL-SN-364092	c 76	N82-24993* #
US-PATENT-APPL-SN-325886	c 33	N82-26574* #	US-PATENT-APPL-SN-347101	c 09	N70-41675* #	US-PATENT-APPL-SN-364093	c 37	N82-29603* #
US-PATENT-APPL-SN-325931	c 37	N82-26674* #	US-PATENT-APPL-SN-347626	c 15	N70-42004* #	US-PATENT-APPL-SN-364094	c 37	N82-29604* #
US-PATENT-APPL-SN-325932	c 33	N82-24428* #	US-PATENT-APPL-SN-347952	c 37	N75-13265* #	US-PATENT-APPL-SN-364097	c 71	N82-27086* #
US-PATENT-APPL-SN-325933	c 76	N82-25995* #	US-PATENT-APPL-SN-347953	c 05	N75-24716* #	US-PATENT-APPL-SN-364126	c 36	N82-26652* #
US-PATENT-APPL-SN-325934	c 24	N82-25324* #	US-PATENT-APPL-SN-347960	c 03	N70-39930* #	US-PATENT-APPL-SN-364867	c 09	N71-10673* #
US-PATENT-APPL-SN-326198	c 35	N75-12272* #	US-PATENT-APPL-SN-348422	c 27	N76-15311* #	US-PATENT-APPL-SN-365244	c 37	N78-17386* #
US-PATENT-APPL-SN-326298	c 14	N71-22765* #	US-PATENT-APPL-SN-348600	c 28	N71-29154* #	US-PATENT-APPL-SN-36531	c 07	N72-25174* #
US-PATENT-APPL-SN-326299	c 26	N71-17818* #	US-PATENT-APPL-SN-348787	c 33	N75-19521* #	US-PATENT-APPL-SN-36534	c 21	N73-14692* #
US-PATENT-APPL-SN-326326	c 35	N74-32879* #	US-PATENT-APPL-SN-349778	c 09	N70-40234* #	US-PATENT-APPL-SN-3654	c 35	N77-27367* #
US-PATENT-APPL-SN-326327	c 44	N74-27519* #	US-PATENT-APPL-SN-349782	c 31	N71-15647* #	US-PATENT-APPL-SN-365644	c 24	N82-26946* #
US-PATENT-APPL-SN-326364	c 51	N75-13502* #	US-PATENT-APPL-SN-349889	c 09	N71-16086* #	US-PATENT-APPL-SN-365950	c 24	N82-26388* #
US-PATENT-APPL-SN-32664	c 11	N72-25287* #	US-PATENT-APPL-SN-350249	c 36	N74-13205* #	US-PATENT-APPL-SN-366025	c 27	N82-26462* #
US-PATENT-APPL-SN-32665	c 14	N72-22444* #	US-PATENT-APPL-SN-350249	c 36	N75-15028* #	US-PATENT-APPL-SN-366103	c 25	N82-26397* #
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US-PATENT-APPL-SN-327565	c 02	N70-36825* #	US-PATENT-APPL-SN-350300	c 31	N74-32920* #	US-PATENT-APPL-SN-367121	c 24	N82-26389* #
US-PATENT-APPL-SN-327658	c 36	N82-25497* #	US-PATENT-APPL-SN-350471	c 35	N82-26634* #	US-PATENT-APPL-SN-367132	c 74	N82-27121* #
US-PATENT-APPL-SN-327659	c 33	N82-20398* #	US-PATENT-APPL-SN-350472	c 33	N82-22437* #	US-PATENT-APPL-SN-367134	c 26	N82-31508* #
US-PATENT-APPL-SN-327921	c 54	N75-13531* #	US-PATENT-APPL-SN-350473	c 07	N82-26294* #	US-PATENT-APPL-SN-367136	c 35	N82-26630* #
US-PATENT-APPL-SN-327969	c 35	N75-13213* #	US-PATENT-APPL-SN-350475	c 35	N82-26633* #	US-PATENT-APPL-SN-367187	c 44	N82-24716* #
US-PATENT-APPL-SN-328140	c 18	N71-21651* #	US-PATENT-APPL-SN-350476	c 44	N82-22673* #	US-PATENT-APPL-SN-367187	c 04	N82-26260* #
US-PATENT-APPL-SN-328760	c 34	N82-25463* #	US-PATENT-APPL-SN-350477	c 35	N82-26629* #	US-PATENT-APPL-SN-367268	c 05	N75-25914* #
US-PATENT-APPL-SN-328792	c 35	N75-12273* #	US-PATENT-APPL-SN-351259	c 15	N71-10672* #	US-PATENT-APPL-SN-367293	c 36	N75-19655* #
US-PATENT-APPL-SN-329237	c 33	N74-34638* #	US-PATENT-APPL-SN-351929	c 33	N75-14957* #	US-PATENT-APPL-SN-367294	c 76	N75-12810* #
US-PATENT-APPL-SN-329243	c 28	N74-33209* #	US-PATENT-APPL-SN-351950	c 33	N75-27249* #	US-PATENT-APPL-SN-367606	c 75	N75-13625* #
US-PATENT-APPL-SN-329331	c 15	N71-15906* #	US-PATENT-APPL-SN-352381	c 20	N75-18310* #	US-PATENT-APPL-SN-367606	c 75	N76-17951* #
US-PATENT-APPL-SN-329595	c 05	N70-41329* #	US-PATENT-APPL-SN-352381	c 37	N76-14461* #	US-PATENT-APPL-SN-368123	c 09	N71-10618* #
US-PATENT-APPL-SN-329598	c 33	N74-22885* #	US-PATENT-APPL-SN-352382	c 60	N75-13539* #	US-PATENT-APPL-SN-368187	c 52	N82-26960* #
US-PATENT-APPL-SN-330209	c 15	N70-41646* #	US-PATENT-APPL-SN-352383	c 35	N75-16783* #	US-PATENT-APPL-SN-368188	c 33	N82-24432* #
US-PATENT-APPL-SN-330210	c 14	N71-21090* #	US-PATENT-APPL-SN-352400	c 26	N71-10607* #	US-PATENT-APPL-SN-368189	c 15	N82-26318* #
US-PATENT-APPL-SN-330612	c 75	N82-24079* #	US-PATENT-APPL-SN-352821	c 44	N82-22672* #	US-PATENT-APPL-SN-36819	c 23	N72-22673* #
US-PATENT-APPL-SN-330613	c 35	N82-24474* #	US-PATENT-APPL-SN-352827	c 35	N82-26632* #	US-PATENT-APPL-SN-36926	c 28	N72-23810* #
US-PATENT-APPL-SN-331323	c 07	N71-16088* #	US-PATENT-APPL-SN-353162	c 33	N75-26243* #	US-PATENT-APPL-SN-369334	c 21	N71-22880* #
US-PATENT-APPL-SN-331324	c 05	N70-35152* #	US-PATENT-APPL-SN-353632	c 15	N71-13789* #	US-PATENT-APPL-SN-369336	c 09	N71-10659* #
US-PATENT-APPL-SN-33159	c 10	N72-11256* #	US-PATENT-APPL-SN-353634	c 15	N70-41829* #	US-PATENT-APPL-SN-369337	c 15	N70-41811* #
US-PATENT-APPL-SN-331759	c 07	N76-18117* #	US-PATENT-APPL-SN-353637	c 02	N70-34160* #	US-PATENT-APPL-SN-369338	c 08	N71-28925* #
US-PATENT-APPL-SN-331760	c 35	N74-27860* #	US-PATENT-APPL-SN-353644	c 07	N71-23098* #	US-PATENT-APPL-SN-369640	c 32	N70-41370* #
US-PATENT-APPL-SN-332123	c 27	N80-32514* #	US-PATENT-APPL-SN-353645	c 15	N71-15922* #	US-PATENT-APPL-SN-3696	c 10	N72-20224* #
US-PATENT-APPL-SN-332313	c 21	N71-10678* #	US-PATENT-APPL-SN-354060	c 74	N76-19935* #	US-PATENT-APPL-SN-370134	c 30	N70-40353* #
US-PATENT-APPL-SN-332339	c 07	N71-11284* #	US-PATENT-APPL-SN-354126	c 37	N82-24496* #	US-PATENT-APPL-SN-370135	c 11	N70-41677* #
US-PATENT-APPL-SN-333535	c 74	N82-24973* #	US-PATENT-APPL-SN-354182	c 10	N71-20841* #	US-PATENT-APPL-SN-370255	c 33	N75-18477* #
US-PATENT-APPL-SN-333536	c 27	N82-24345* #	US-PATENT-APPL-SN-354406	c 52	N76-14757* #	US-PATENT-APPL-SN-370271	c 32	N75-24981* #
US-PATENT-APPL-SN-333766	c 31	N71-15663* #	US-PATENT-APPL-SN-354407	c 33	N74-22865* #	US-PATENT-APPL-SN-37050	c 33	N74-26732* #
US-PATENT-APPL-SN-333770	c 21	N71-15583* #	US-PATENT-APPL-SN-354408	c 35	N75-19814* #	US-PATENT-APPL-SN-370582	c 18	N76-14188* #
US-PATENT-APPL-SN-333912	c 32	N74-19790* #	US-PATENT-APPL-SN-354611	c 25	N74-26947* #	US-PATENT-APPL-SN-370872	c 37	N74-32918* #
US-PATENT-APPL-SN-33398	c 14	N70-35587* #	US-PATENT-APPL-SN-354612	c 35	N75-30504* #	US-PATENT-APPL-SN-370989	c 23	N71-29049* #
US-PATENT-APPL-SN-334349	c 35	N75-19611* #	US-PATENT-APPL-SN-355126	c 17	N71-15644* #	US-PATENT-APPL-SN-370999	c 74	N78-15879* #
US-PATENT-APPL-SN-334672	c 14	N70-41330* #	US-PATENT-APPL-SN-355129	c 14	N70-41957* #	US-PATENT-APPL-SN-371322	c 44	N76-14600* #
US-PATENT-APPL-SN-334678	c 11	N71-10777* #	US-PATENT-APPL-SN-355130	c 15	N70-40354* #	US-PATENT-APPL-SN-371351	c 44	N82-26779* #
US-PATENT-APPL-SN-335036	c 25	N82-25335* #	US-PATENT-APPL-SN-356488	c 08	N71-19544* #	US-PATENT-APPL-SN-371352	c 52	N82-26962* #
US-PATENT-APPL-SN-335201	c 33	N74-17927* #	US-PATENT-APPL-SN-356554	c 24	N75-33181* #	US-PATENT-APPL-SN-371353	c 37	N82-26676* #
US-PATENT-APPL-SN-335351	c 06	N72-17093* #	US-PATENT-APPL-SN-356555	c 37	N75-19685* #	US-PATENT-APPL-SN-371354	c 24	N82-26385* #
US-PATENT-APPL-SN-335441	c 14	N71-23268* #	US-PATENT-APPL-SN-356664	c 31	N75-12161* #	US-PATENT-APPL-SN-371856	c 15	N70-42033* #
US-PATENT-APPL-SN-336103	c 16	N71-15550* #	US-PATENT-APPL-SN-356692	c 15	N70-41371* #	US-PATENT-APPL-SN-371857	c 07	N70-16680* #
US-PATENT-APPL-SN-336319	c 44	N74-33379* #	US-PATENT-APPL-SN-357126	c 35	N74-34857* #	US-PATENT-APPL-SN-372148	c 35	N74-26949* #
US-PATENT-APPL-SN-336320	c 15	N71-15966* #	US-PATENT-APPL-SN-357312	c 27	N76-16229* #	US-PATENT-APPL-SN-372149	c 37	N75-15050* #
US-PATENT-APPL-SN-336607	c 10	N71-15910* #	US-PATENT-APPL-SN-357334	c 03	N71-12258* #	US-PATENT-APPL-SN-372279	c 35	N82-32661* #
US-PATENT-APPL-SN-336608	c 32	N71-17645* #	US-PATENT-APPL-SN-357336	c 03	N71-12259* #	US-PATENT-APPL-SN-372438	c 30	N71-17788* #
US-PATENT-APPL-SN-337487	c 33	N74-26977* #	US-PATENT-APPL-SN-357337	c 15	N71-10782* #	US-PATENT-APPL-SN-372648	c 27	N71-16348* #
US-PATENT-APPL-SN-337816	c 35	N75-15931* #	US-PATENT-APPL-SN-357340	c 23	N71-15673* #	US-PATENT-APPL-SN-372727	c 31	N70-36845* #
US-PATENT-APPL-SN-338386	c 37	N82-26675* #	US-PATENT-APPL-SN-358088	c 72	N82-24953* #	US-PATENT-APPL-SN-372730	c 28	N71-28850* #
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US-PATENT-APPL-SN-510475	c 14	N71-23087*	US-PATENT-APPL-SN-528031	c 10	N69-39888* #	US-PATENT-APPL-SN-548468	c 37	N76-27567* #
US-PATENT-APPL-SN-510677	c 44	N77-19571* #	US-PATENT-APPL-SN-529593	c 27	N71-21819*	US-PATENT-APPL-SN-548559	c 44	N76-29700* #
US-PATENT-APPL-SN-511299	c 15	N71-22798*	US-PATENT-APPL-SN-529594	c 15	N69-27483* #	US-PATENT-APPL-SN-548808	c 14	N71-23227* #
US-PATENT-APPL-SN-511334	c 36	N77-32478* #	US-PATENT-APPL-SN-529594	c 33	N71-29152*	US-PATENT-APPL-SN-549418	c 36	N76-31512* #
US-PATENT-APPL-SN-511346	c 15	N77-10113* #	US-PATENT-APPL-SN-529609	c 09	N69-39986* #	US-PATENT-APPL-SN-549860	c 03	N71-19438* #
US-PATENT-APPL-SN-5114	c 06	N72-25150* #	US-PATENT-APPL-SN-529684	c 54	N78-18761* #	US-PATENT-APPL-SN-550088	c 07	N71-24612* #
US-PATENT-APPL-SN-511564	c 09	N69-39885* #	US-PATENT-APPL-SN-530958	c 09	N71-22985* #	US-PATENT-APPL-SN-551182	c 03	N71-23187* #
US-PATENT-APPL-SN-511567	c 05	N71-12336* #	US-PATENT-APPL-SN-531565	c 36	N76-24553* #	US-PATENT-APPL-SN-551184	c 37	N76-22541* #
US-PATENT-APPL-SN-511887	c 35	N76-15436* #	US-PATENT-APPL-SN-531566	c 10	N71-28860* #	US-PATENT-APPL-SN-551694	c 31	N71-18611* #
US-PATENT-APPL-SN-511894	c 03	N76-32140* #	US-PATENT-APPL-SN-531572	c 10	N71-28860* #	US-PATENT-APPL-SN-551815	c 02	N71-11038* #
US-PATENT-APPL-SN-512352	c 15	N70-33330* #	US-PATENT-APPL-SN-531575	c 66	N76-19888* #	US-PATENT-APPL-SN-551846	c 03	N71-20492* #
US-PATENT-APPL-SN-512509	c 26	N75-27125* #	US-PATENT-APPL-SN-531642	c 32	N76-31372* #	US-PATENT-APPL-SN-551933	c 33	N71-14032* #
US-PATENT-APPL-SN-512559	c 23	N71-22881* #	US-PATENT-APPL-SN-531647	c 25	N71-21693* #	US-PATENT-APPL-SN-551961	c 15	N70-33376* #
US-PATENT-APPL-SN-512561	c 16	N71-25914* #	US-PATENT-APPL-SN-531647	c 04	N76-20114* #	US-PATENT-APPL-SN-552108	c 07	N79-14096* #
US-PATENT-APPL-SN-512562	c 16	N71-24074* #	US-PATENT-APPL-SN-532006	c 04	N77-19056* #	US-PATENT-APPL-SN-552344	c 09	N69-27463* #
US-PATENT-APPL-SN-512825	c 32	N76-15329* #	US-PATENT-APPL-SN-532784	c 23	N71-24857* #	US-PATENT-APPL-SN-552454	c 35	N76-24525* #
US-PATENT-APPL-SN-51317	c 14	N73-30389* #	US-PATENT-APPL-SN-532784	c 27	N75-29263* #	US-PATENT-APPL-SN-553333	c 10	N73-16206* #
US-PATENT-APPL-SN-513346	c 07	N79-14095* #	US-PATENT-APPL-SN-533555	c 27	N78-17205* #	US-PATENT-APPL-SN-553687	c 44	N76-29704* #
US-PATENT-APPL-SN-513389	c 25	N75-12087* #	US-PATENT-APPL-SN-533556	c 36	N76-18428* #	US-PATENT-APPL-SN-553891	c 23	N71-16341* #
US-PATENT-APPL-SN-513576	c 35	N76-29552* #	US-PATENT-APPL-SN-533650	c 36	N76-29575* #	US-PATENT-APPL-SN-554277	c 07	N71-26579* #
US-PATENT-APPL-SN-513611	c 24	N76-22309* #	US-PATENT-APPL-SN-533659	c 32	N76-21366* #	US-PATENT-APPL-SN-554897	c 15	N71-28511* #
US-PATENT-APPL-SN-513612	c 24	N80-33482* #	US-PATENT-APPL-SN-533734	c 35	N75-27329* #	US-PATENT-APPL-SN-554949	c 15	N70-33382* #
US-PATENT-APPL-SN-513612	c 05	N77-17029* #	US-PATENT-APPL-SN-534265	c 14	N73-30390* #	US-PATENT-APPL-SN-554949	c 06	N71-20717* #
US-PATENT-APPL-SN-513613	c 27	N78-15276* #	US-PATENT-APPL-SN-534265	c 33	N77-10428* #	US-PATENT-APPL-SN-554950	c 17	N71-23248* #
US-PATENT-APPL-SN-513690	c 37	N76-20480* #	US-PATENT-APPL-SN-534265	c 32	N76-21365* #	US-PATENT-APPL-SN-554959	c 27	N79-21191* #
US-PATENT-APPL-SN-514407	c 18	N71-22894* #	US-PATENT-APPL-SN-534295	c 35	N76-24523* #	US-PATENT-APPL-SN-555189	c 08	N71-27255* #
US-PATENT-APPL-SN-514546	c 74	N76-20958* #	US-PATENT-APPL-SN-534564	c 15	N71-21076* #	US-PATENT-APPL-SN-555336	c 33	N76-27473* #
US-PATENT-APPL-SN-51473	c 02	N70-33266* #	US-PATENT-APPL-SN-534564	c 10	N71-22961* #	US-PATENT-APPL-SN-555534	c 11	N72-25288* #
US-PATENT-APPL-SN-51477	c 14	N72-25412* #	US-PATENT-APPL-SN-534901	c 14	N70-36807* #	US-PATENT-APPL-SN-555535	c 14	N73-20474* #
US-PATENT-APPL-SN-515484	c 14	N71-22993* #	US-PATENT-APPL-SN-534966	c 37	N80-14395* #	US-PATENT-APPL-SN-555537	c 14	N72-29464* #
US-PATENT-APPL-SN-516150	c 05	N71-19440* #	US-PATENT-APPL-SN-534975	c 15	N71-24042* #	US-PATENT-APPL-SN-555641	c 18	N72-25540* #
US-PATENT-APPL-SN-516151	c 15	N70-41679* #	US-PATENT-APPL-SN-535169	c 14	N71-24232* #	US-PATENT-APPL-SN-555750	c 51	N76-29891* #
US-PATENT-APPL-SN-516152	c 14	N71-23225* #	US-PATENT-APPL-SN-535304	c 54	N78-17678* #	US-PATENT-APPL-SN-556784	c 27	N79-12221* #
US-PATENT-APPL-SN-516153	c 10	N71-28783* #	US-PATENT-APPL-SN-535410	c 09	N71-28810* #	US-PATENT-APPL-SN-556830	c 09	N71-20447* #
US-PATENT-APPL-SN-516154	c 09	N69-24330* #	US-PATENT-APPL-SN-536210	c 37	N76-15457* #	US-PATENT-APPL-SN-557016	c 15	N71-26294* #
US-PATENT-APPL-SN-516155	c 09	N71-23270* #	US-PATENT-APPL-SN-536216	c 17	N71-24830* #	US-PATENT-APPL-SN-557430	c 15	N71-23086* #
US-PATENT-APPL-SN-516158	c 09	N71-19479* #	US-PATENT-APPL-SN-536321	c 10	N71-23315* #	US-PATENT-APPL-SN-557430	c 52	N77-14737* #
US-PATENT-APPL-SN-516159	c 14	N70-41812* #	US-PATENT-APPL-SN-536535	c 10	N71-23544* #	US-PATENT-APPL-SN-557565	c 45	N76-17656* #
US-PATENT-APPL-SN-516160	c 33	N71-16277* #	US-PATENT-APPL-SN-536761	c 33	N76-14371* #	US-PATENT-APPL-SN-557584	c 24	N77-27187* #
US-PATENT-APPL-SN-516162	c 07	N71-28900* #	US-PATENT-APPL-SN-536762	c 33	N76-19338* #	US-PATENT-APPL-SN-557861	c 09	N71-20851* #
US-PATENT-APPL-SN-516793	c 16	N71-22895* #	US-PATENT-APPL-SN-536786	c 37	N76-22540* #	US-PATENT-APPL-SN-557868	c 03	N71-24605* #
US-PATENT-APPL-SN-516794	c 14	N70-42074* #	US-PATENT-APPL-SN-536786	c 33	N76-31409* #	US-PATENT-APPL-SN-557871	c 14	N70-41682* #
US-PATENT-APPL-SN-517100	c 28	N70-33241* #	US-PATENT-APPL-SN-537024	c 44	N77-32581* #	US-PATENT-APPL-SN-558006	c 10	N71-21483* #
US-PATENT-APPL-SN-517156	c 14	N71-23093* #	US-PATENT-APPL-SN-537480	c 44	N76-27664* #	US-PATENT-APPL-SN-558006	c 06	N72-31140* #
US-PATENT-APPL-SN-517157	c 15	N71-22722* #	US-PATENT-APPL-SN-537615	c 45	N76-31714* #	US-PATENT-APPL-SN-558055	c 74	N77-10899* #
US-PATENT-APPL-SN-517158	c 14	N71-23401* #	US-PATENT-APPL-SN-537617	c 28	N71-22983* #	US-PATENT-APPL-SN-558349	c 33	N71-29046* #
US-PATENT-APPL-SN-517159	c 15	N71-20740* #	US-PATENT-APPL-SN-537979	c 09	N71-22987* #	US-PATENT-APPL-SN-558350	c 33	N71-24145* #
US-PATENT-APPL-SN-517858	c 14	N71-21006* #	US-PATENT-APPL-SN-538047	c 37	N77-11397* #	US-PATENT-APPL-SN-558351	c 33	N71-28892* #
US-PATENT-APPL-SN-517869	c 15	N71-23050* #	US-PATENT-APPL-SN-538166	c 37	N76-27568* #	US-PATENT-APPL-SN-558445	c 14	N69-39785* #
US-PATENT-APPL-SN-517995	c 39	N76-31562* #	US-PATENT-APPL-SN-538168	c 15	N71-21177* #	US-PATENT-APPL-SN-558446	c 35	N76-29551* #
US-PATENT-APPL-SN-518487	c 05	N71-11190* #	US-PATENT-APPL-SN-538663	c 23	N71-16098* #	US-PATENT-APPL-SN-558446	c 34	N79-13289* #
US-PATENT-APPL-SN-518544	c 44	N76-24696* #	US-PATENT-APPL-SN-538905	c 54	N78-17680* #	US-PATENT-APPL-SN-558446	c 34	N80-24753* #
US-PATENT-APPL-SN-518545	c 19	N76-22284* #	US-PATENT-APPL-SN-538907	c 08	N71-18594* #	US-PATENT-APPL-SN-558446	c 34	N79-13288* #
US-PATENT-APPL-SN-518546	c 26	N76-18257* #	US-PATENT-APPL-SN-538908	c 33	N71-28803* #	US-PATENT-APPL-SN-558446	c 73	N78-19920* #
US-PATENT-APPL-SN-518684	c 44	N76-22657* #	US-PATENT-APPL-SN-538911	c 33	N71-22890* #	US-PATENT-APPL-SN-558446	c 15	N69-21922* #
US-PATENT-APPL-SN-518685	c 35	N76-14429* #	US-PATENT-APPL-SN-538913	c 33	N71-22792* #	US-PATENT-APPL-SN-558446	c 10	N71-24863* #
US-PATENT-APPL-SN-519160	c 18	N71-20742* #	US-PATENT-APPL-SN-538982	c 14	N71-17627* #	US-PATENT-APPL-SN-558446	c 14	N71-15622* #
US-PATENT-APPL-SN-519161	c 05	N71-20718* #	US-PATENT-APPL-SN-538983	c 33	N77-14333* #	US-PATENT-APPL-SN-558446	c 44	N76-23675* #
US-PATENT-APPL-SN-519395	c 09	N69-24317* #	US-PATENT-APPL-SN-539237	c 33	N76-18353* #	US-PATENT-APPL-SN-558446	c 14	N71-20427* #
US-PATENT-APPL-SN-520838	c 08	N71-18595* #	US-PATENT-APPL-SN-539255	c 33	N71-16278* #	US-PATENT-APPL-SN-558446	c 32	N77-10392* #
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US-PATENT-APPL-SN-521601	c 60	N76-14818* #	US-PATENT-APPL-SN-540779	c 15	N71-22799* #	US-PATENT-APPL-SN-558446	c 14	N71-22995* #
US-PATENT-APPL-SN-521602	c 37	N76-18454* #	US-PATENT-APPL-SN-541399	c 33	N79-12331* #	US-PATENT-APPL-SN-558446	c 14	N71-23797* #
US-PATENT-APPL-SN-521603	c 35	N75-29380* #	US-PATENT-APPL-SN-542157	c 14	N71-20428* #	US-PATENT-APPL-SN-558446	c 32	N77-31350* #
US-PATENT-APPL-SN-521620	c 09	N77-10071* #	US-PATENT-APPL-SN-542192	c 20	N76-21276* #	US-PATENT-APPL-SN-558446	c 31	N79-21227* #
US-PATENT-APPL-SN-521753	c 15	N70-41960* #	US-PATENT-APPL-SN-542713	c 26	N75-27126* #	US-PATENT-APPL-SN-558446	c 10	N71-24799* #
US-PATENT-APPL-SN-521754	c 07	N71-22984* #	US-PATENT-APPL-SN-542713	c 07	N72-25173* #	US-PATENT-APPL-SN-558446	c 09	N69-21468* #
US-PATENT-APPL-SN-521755	c 28	N71-28849* #	US-PATENT-APPL-SN-542713	c 23	N71-23976* #	US-PATENT-APPL-SN-558446	c 27	N78-32261* #
US-PATENT-APPL-SN-521816	c 35	N77-19385* #	US-PATENT-APPL-SN-542713	c 02	N73-19004* #	US-PATENT-APPL-SN-558446	c 17	N76-29347* #
US-PATENT-APPL-SN-521817	c 45	N76-21742* #	US-PATENT-APPL-SN-542754	c 34	N76-18374* #	US-PATENT-APPL-SN-558446	c 37	N76-31524* #
US-PATENT-APPL-SN-521994	c 17	N71-23365* #	US-PATENT-APPL-SN-543206	c 05	N71-23159* #	US-PATENT-APPL-SN-558446	c 35	N76-18401* #
US-PATENT-APPL-SN-521996	c 15	N69-27871* #	US-PATENT-APPL-SN-543774	c 06	N69-39733* #	US-PATENT-APPL-SN-558446	c 15	N71-18613* #
US-PATENT-APPL-SN-521998	c 07	N69-24323* #	US-PATENT-APPL-SN-544611	c 33	N76-15373* #</			



US-PATENT-APPL-SN-565162	c 35	N79-14348*	US-PATENT-APPL-SN-583055	c 07	N78-18067*	US-PATENT-APPL-SN-601229	c 14	N71-26474*
US-PATENT-APPL-SN-565289	c 38	N77-17495*	US-PATENT-APPL-SN-583056	c 37	N78-17384*	US-PATENT-APPL-SN-602617	c 37	N77-23483*
US-PATENT-APPL-SN-565290	c 17	N76-22245*	US-PATENT-APPL-SN-583219	c 43	N82-13465*	US-PATENT-APPL-SN-602618	c 44	N76-31667*
US-PATENT-APPL-SN-566392	c 14	N71-23175*	US-PATENT-APPL-SN-583485	c 33	N77-28385*	US-PATENT-APPL-SN-602676	c 22	N73-32528*
US-PATENT-APPL-SN-566397	c 05	N71-23161*	US-PATENT-APPL-SN-583486	c 33	N77-26386*	US-PATENT-APPL-SN-602828	c 09	N71-13531*
US-PATENT-APPL-SN-566493	c 44	N76-29701*	US-PATENT-APPL-SN-583487	c 52	N76-19785*	US-PATENT-APPL-SN-603396	c 14	N69-23191*
US-PATENT-APPL-SN-566494	c 32	N77-30309*	US-PATENT-APPL-SN-584015	c 14	N71-26475*	US-PATENT-APPL-SN-603397	c 26	N71-23292*
US-PATENT-APPL-SN-566495	c 33	N77-17351*	US-PATENT-APPL-SN-584066	c 10	N71-20852*	US-PATENT-APPL-SN-604374	c 44	N76-29699*
US-PATENT-APPL-SN-566717	c 14	N71-24233*	US-PATENT-APPL-SN-584067	c 07	N71-12392*	US-PATENT-APPL-SN-605090	c 15	N71-19485*
US-PATENT-APPL-SN-567686	c 15	N71-22994*	US-PATENT-APPL-SN-584070	c 09	N69-27500*	US-PATENT-APPL-SN-605091	c 15	N71-26346*
US-PATENT-APPL-SN-567806	c 06	N71-22975*	US-PATENT-APPL-SN-584072	c 26	N71-16037*	US-PATENT-APPL-SN-605092	c 05	N71-23317*
US-PATENT-APPL-SN-56791	c 10	N72-16172*	US-PATENT-APPL-SN-584094	c 26	N77-20201*	US-PATENT-APPL-SN-605093	c 17	N71-24911*
US-PATENT-APPL-SN-568067	c 31	N71-22968*	US-PATENT-APPL-SN-584914	c 54	N78-17679*	US-PATENT-APPL-SN-605094	c 09	N71-24808*
US-PATENT-APPL-SN-568071	c 14	N69-27461*	US-PATENT-APPL-SN-585217	c 54	N78-17677*	US-PATENT-APPL-SN-605095	c 10	N71-19417*
US-PATENT-APPL-SN-568160	c 10	N71-18724*	US-PATENT-APPL-SN-585420	c 35	N76-31489*	US-PATENT-APPL-SN-605096	c 15	N71-24834*
US-PATENT-APPL-SN-568346	c 04	N69-27487*	US-PATENT-APPL-SN-585988	c 33	N75-29318*	US-PATENT-APPL-SN-605097	c 14	N69-21923*
US-PATENT-APPL-SN-568352	c 09	N71-20842*	US-PATENT-APPL-SN-586324	c 05	N71-26293*	US-PATENT-APPL-SN-605098	c 09	N71-26092*
US-PATENT-APPL-SN-568354	c 14	N71-22752*	US-PATENT-APPL-SN-586325	c 31	N71-24315*	US-PATENT-APPL-SN-605099	c 09	N71-23548*
US-PATENT-APPL-SN-568355	c 32	N71-23971*	US-PATENT-APPL-SN-586329	c 05	N71-24623*	US-PATENT-APPL-SN-605100	c 15	N71-21536*
US-PATENT-APPL-SN-568356	c 14	N71-15599*	US-PATENT-APPL-SN-586330	c 05	N71-12344*	US-PATENT-APPL-SN-605102	c 09	N69-39987*
US-PATENT-APPL-SN-568362	c 03	N69-39983*	US-PATENT-APPL-SN-586635	c 21	N71-15642*	US-PATENT-APPL-SN-60531	c 28	N70-37980*
US-PATENT-APPL-SN-568364	c 10	N71-26418*	US-PATENT-APPL-SN-588651	c 31	N71-24813*	US-PATENT-APPL-SN-60536	c 02	N70-38009*
US-PATENT-APPL-SN-568541	c 24	N77-28225*	US-PATENT-APPL-SN-588671	c 03	N71-23354*	US-PATENT-APPL-SN-605518	c 15	N71-23023*
US-PATENT-APPL-SN-568541	c 27	N81-14077*	US-PATENT-APPL-SN-588721	c 27	N78-33228*	US-PATENT-APPL-SN-605964	c 06	N73-30103*
US-PATENT-APPL-SN-568620	c 10	N71-26626*	US-PATENT-APPL-SN-589119	c 32	N77-32342*	US-PATENT-APPL-SN-605994	c 06	N73-30101*
US-PATENT-APPL-SN-568987	c 10	N71-19547*	US-PATENT-APPL-SN-589172	c 27	N79-14214*	US-PATENT-APPL-SN-606027	c 06	N73-30099*
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US-PATENT-APPL-SN-570093	c 06	N71-17705*	US-PATENT-APPL-SN-589233	c 33	N77-14335*	US-PATENT-APPL-SN-606462	c 08	N71-24891*
US-PATENT-APPL-SN-570095	c 14	N71-23226*	US-PATENT-APPL-SN-590141	c 03	N69-24267*	US-PATENT-APPL-SN-606463	c 14	N71-24864*
US-PATENT-APPL-SN-570097	c 15	N69-23185*	US-PATENT-APPL-SN-590144	c 15	N71-15606*	US-PATENT-APPL-SN-606464	c 15	N71-18579*
US-PATENT-APPL-SN-570678	c 17	N71-25903*	US-PATENT-APPL-SN-590145	c 07	N69-39980*	US-PATENT-APPL-SN-606891	c 44	N77-14581*
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US-PATENT-APPL-SN-571459	c 54	N78-14784*	US-PATENT-APPL-SN-590147	c 15	N71-21489*	US-PATENT-APPL-SN-607484	c 09	N71-26002*
US-PATENT-APPL-SN-571821	c 20	N76-22296*	US-PATENT-APPL-SN-590158	c 05	N71-24147*	US-PATENT-APPL-SN-607608	c 14	N69-27484*
US-PATENT-APPL-SN-57252	c 14	N72-25414*	US-PATENT-APPL-SN-590159	c 09	N69-24324*	US-PATENT-APPL-SN-607969	c 09	N76-23273*
US-PATENT-APPL-SN-57253	c 18	N72-25541*	US-PATENT-APPL-SN-590182	c 37	N76-29588*	US-PATENT-APPL-SN-608247	c 15	N71-20813*
US-PATENT-APPL-SN-572990	c 37	N78-16369*	US-PATENT-APPL-SN-590183	c 74	N79-13855*	US-PATENT-APPL-SN-608482	c 74	N77-20882*
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US-PATENT-APPL-SN-635325	c 14	N69-27431* #	US-PATENT-APPL-SN-652979	c 45	N82-11634* #	US-PATENT-APPL-SN-670814	c 03	N71-19545* #
US-PATENT-APPL-SN-635326	c 14	N71-18482* #	US-PATENT-APPL-SN-653277	c 31	N71-23912* #	US-PATENT-APPL-SN-670829	c 28	N72-23809* #
US-PATENT-APPL-SN-635327	c 12	N69-39988* #	US-PATENT-APPL-SN-653278	c 14	N69-27503* #	US-PATENT-APPL-SN-672209	c 52	N82-22875* #
US-PATENT-APPL-SN-635328	c 09	N69-21467* #	US-PATENT-APPL-SN-653316	c 25	N77-32255* #	US-PATENT-APPL-SN-672210	c 25	N78-10224* #
US-PATENT-APPL-SN-635332	c 08	N72-25209* #	US-PATENT-APPL-SN-653422	c 35	N77-20401* #	US-PATENT-APPL-SN-672219	c 37	N80-28711* #
US-PATENT-APPL-SN-635519	c 33	N77-24455* #	US-PATENT-APPL-SN-653682	c 39	N78-10493* #	US-PATENT-APPL-SN-672221	c 37	N81-26447* #
US-PATENT-APPL-SN-635531	c 35	N77-14334* #	US-PATENT-APPL-SN-654787	c 07	N77-32148* #	US-PATENT-APPL-SN-672222	c 31	N78-17237* #
US-PATENT-APPL-SN-635970	c 15	N69-21465* #	US-PATENT-APPL-SN-655149	c 07	N77-23106* #	US-PATENT-APPL-SN-672223	c 07	N78-27121* #
US-PATENT-APPL-SN-635972	c 18	N71-23710* #	US-PATENT-APPL-SN-65548	c 18	N70-39897* #	US-PATENT-APPL-SN-672224	c 07	N78-25090* #
US-PATENT-APPL-SN-63610	c 08	N72-25147* #	US-PATENT-APPL-SN-655675	c 17	N71-24142* #	US-PATENT-APPL-SN-672223	c 51	N78-27733* #
US-PATENT-APPL-SN-636193	c 74	N78-15880* #	US-PATENT-APPL-SN-655724	c 15	N71-19432* #	US-PATENT-APPL-SN-672382	c 15	N71-23815* #
US-PATENT-APPL-SN-636796	c 35	N78-17358* #	US-PATENT-APPL-SN-656952	c 09	N71-12519* #	US-PATENT-APPL-SN-672383	c 15	N71-24045* #
US-PATENT-APPL-SN-636878	c 14	N71-20442* #	US-PATENT-APPL-SN-656953	c 14	N71-17585* #	US-PATENT-APPL-SN-672384	c 15	N71-27067* #
US-PATENT-APPL-SN-637247	c 35	N77-10493* #	US-PATENT-APPL-SN-656959	c 09	N71-24843* #	US-PATENT-APPL-SN-672636	c 26	N72-17820* #
US-PATENT-APPL-SN-637249	c 38	N76-28563* #	US-PATENT-APPL-SN-657442	c 21	N71-14132* #	US-PATENT-APPL-SN-672695	c 37	N79-11405* #
US-PATENT-APPL-SN-637268	c 47	N77-10753* #	US-PATENT-APPL-SN-657903	c 18	N71-26100* #	US-PATENT-APPL-SN-672815	c 37	N77-23482* #
US-PATENT-APPL-SN-637269	c 52	N77-28717* #	US-PATENT-APPL-SN-657907	c 07	N76-18131* #	US-PATENT-APPL-SN-673226	c 08	N71-12502* #
US-PATENT-APPL-SN-637882	c 15	N71-17650* #	US-PATENT-APPL-SN-657995	c 35	N77-22450* #	US-PATENT-APPL-SN-673227	c 11	N71-24964* #
US-PATENT-APPL-SN-638192	c 10	N71-26415* #	US-PATENT-APPL-SN-657996	c 60	N78-10709* #	US-PATENT-APPL-SN-673229	c 07	N71-19433* #
US-PATENT-APPL-SN-638194	c 33	N71-21507* #	US-PATENT-APPL-SN-657997	c 60	N77-32731* #	US-PATENT-APPL-SN-674194	c 33	N71-15641* #
US-PATENT-APPL-SN-638707	c 14	N69-27486* #	US-PATENT-APPL-SN-658132	c 27	N78-32262* #	US-PATENT-APPL-SN-674195	c 27	N78-17215* #
US-PATENT-APPL-SN-639589	c 28	N70-33372* #	US-PATENT-APPL-SN-658133	c 44	N82-32580* #	US-PATENT-APPL-SN-674355	c 74	N78-17866* #
US-PATENT-APPL-SN-640154	c 09	N71-18600* #	US-PATENT-APPL-SN-65840	c 71	N78-10837* #	US-PATENT-APPL-SN-674356	c 14	N71-20429* #
US-PATENT-APPL-SN-640447	c 15	N71-19486* #	US-PATENT-APPL-SN-658449	c 10	N72-20225* #	US-PATENT-APPL-SN-674357	c 14	N71-23699* #
US-PATENT-APPL-SN-640448	c 08	N71-19420* #	US-PATENT-APPL-SN-658450	c 32	N77-20289* #	US-PATENT-APPL-SN-674700	c 05	N71-12351* #
US-PATENT-APPL-SN-640449	c 09	N71-19516* #	US-PATENT-APPL-SN-658487	c 37	N77-22482* #	US-PATENT-APPL-SN-675238	c 27	N77-31308* #
US-PATENT-APPL-SN-640450	c 15	N71-17694* #	US-PATENT-APPL-SN-658955	c 37	N81-25371* #	US-PATENT-APPL-SN-675328	c 10	N71-26374* #
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US-PATENT-APPL-SN-640453	c 23	N71-16099* #	US-PATENT-APPL-SN-658957	c 15	N71-15607* #	US-PATENT-APPL-SN-676012	c 35	N78-10429* #
US-PATENT-APPL-SN-640454	c 06	N71-11238* #	US-PATENT-APPL-SN-658964	c 14	N71-17584* #	US-PATENT-APPL-SN-676375	c 05	N71-11193* #
US-PATENT-APPL-SN-640455	c 06	N71-23099* #	US-PATENT-APPL-SN-658966	c 19	N71-26674* #	US-PATENT-APPL-SN-676386	c 14	N71-18483* #
US-PATENT-APPL-SN-640456	c 03	N71-26726* #	US-PATENT-APPL-SN-658999	c 44	N82-24645* #	US-PATENT-APPL-SN-676387	c 08	N71-12507* #
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US-PATENT-APPL-SN-640458	c 15	N71-23811* #	US-PATENT-APPL-SN-66004	c 15	N72-25450* #	US-PATENT-APPL-SN-676432	c 21	N71-11766* #
US-PATENT-APPL-SN-640459	c 10	N71-18723* #	US-PATENT-APPL-SN-6600571	c 26	N71-23654* #	US-PATENT-APPL-SN-676433	c 28	N78-24365* #
US-PATENT-APPL-SN-640460	c 14	N69-21541* #	US-PATENT-APPL-SN-6600572	c 15	N71-15571* #	US-PATENT-APPL-SN-676434	c 28	N80-20402* #
US-PATENT-APPL-SN-640462	c 15	N71-20443* #	US-PATENT-APPL-SN-6600573	c 15	N71-28936* #	US-PATENT-APPL-SN-676435	c 28	N81-14103* #
US-PATENT-APPL-SN-640781	c 03	N69-25146* #	US-PATENT-APPL-SN-6600841	c 14	N71-15621* #	US-PATENT-APPL-SN-676436	c 52	N77-18716* #
US-PATENT-APPL-SN-640783	c 09	N71-26000* #	US-PATENT-APPL-SN-6600842	c 14	N71-23726* #</			



US-PATENT-APPL-SN-67730	c 15	N73-13463* #	US-PATENT-APPL-SN-69209	c 15	N72-21463* #	US-PATENT-APPL-SN-710032	c 54	N77-30749* #
US-PATENT-APPL-SN-677351	c 35	N77-32455* #	US-PATENT-APPL-SN-692284	c 27	N78-14164* #	US-PATENT-APPL-SN-710035	c 44	N78-24608* #
US-PATENT-APPL-SN-677352	c 43	N78-10529* #	US-PATENT-APPL-SN-692331	c 10	N71-26326* #	US-PATENT-APPL-SN-710036	c 44	N78-32539* #
US-PATENT-APPL-SN-677353	c 52	N78-14773* #	US-PATENT-APPL-SN-692332	c 07	N71-11281* #	US-PATENT-APPL-SN-710047	c 09	N72-21247* #
US-PATENT-APPL-SN-677475	c 32	N71-26681* #	US-PATENT-APPL-SN-692413	c 25	N78-25148* #	US-PATENT-APPL-SN-710148	c 18	N73-12604* #
US-PATENT-APPL-SN-677476	c 14	N71-17586* #	US-PATENT-APPL-SN-692414	c 32	N77-24331* #	US-PATENT-APPL-SN-710533	c 02	N71-11043* #
US-PATENT-APPL-SN-677505	c 09	N71-13521* #	US-PATENT-APPL-SN-692471	c 09	N71-12518* #	US-PATENT-APPL-SN-710561	c 09	N71-12517* #
US-PATENT-APPL-SN-677506	c 16	N71-15567* #	US-PATENT-APPL-SN-692636	c 27	N81-24258* #	US-PATENT-APPL-SN-710562	c 31	N71-16085* #
US-PATENT-APPL-SN-677508	c 16	N71-15551* #	US-PATENT-APPL-SN-693074	c 44	N78-24609* #	US-PATENT-APPL-SN-710621	c 06	N73-27086* #
US-PATENT-APPL-SN-67815	c 28	N72-22771* #	US-PATENT-APPL-SN-693419	c 31	N71-16222* #	US-PATENT-APPL-SN-710945	c 33	N71-15568* #
US-PATENT-APPL-SN-678520	c 20	N78-24275* #	US-PATENT-APPL-SN-693420	c 31	N71-16080* #	US-PATENT-APPL-SN-710949	c 12	N71-17631* #
US-PATENT-APPL-SN-678700	c 05	N71-19439* #	US-PATENT-APPL-SN-694246	c 15	N71-26673* #	US-PATENT-APPL-SN-711898	c 18	N71-24934* #
US-PATENT-APPL-SN-678813	c 33	N81-29342* #	US-PATENT-APPL-SN-694247	c 09	N69-21927* #	US-PATENT-APPL-SN-711899	c 12	N71-26772* #
US-PATENT-APPL-SN-679055	c 08	N71-24633* #	US-PATENT-APPL-SN-694317	c 12	N71-20436* #	US-PATENT-APPL-SN-711903	c 18	N71-16105* #
US-PATENT-APPL-SN-679862	c 20	N71-16340* #	US-PATENT-APPL-SN-694340	c 11	N71-17600* #	US-PATENT-APPL-SN-711921	c 18	N71-18830* #
US-PATENT-APPL-SN-679865	c 09	N71-12521* #	US-PATENT-APPL-SN-694345	c 10	N71-23669* #	US-PATENT-APPL-SN-711970	c 09	N71-18830* #
US-PATENT-APPL-SN-679980	c 44	N82-24642* #	US-PATENT-APPL-SN-694406	c 35	N79-10389* #	US-PATENT-APPL-SN-711971	c 09	N71-23598* #
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US-PATENT-APPL-SN-679996	c 44	N82-24643* #	US-PATENT-APPL-SN-694855	c 33	N77-30365* #	US-PATENT-APPL-SN-712065	c 08	N71-12503* #
US-PATENT-APPL-SN-680015	c 52	N78-14750* #	US-PATENT-APPL-SN-694888	c 23	N75-14834* #	US-PATENT-APPL-SN-712099	c 23	N71-24868* #
US-PATENT-APPL-SN-680048	c 44	N82-24641* #	US-PATENT-APPL-SN-695513	c 07	N78-25089* #	US-PATENT-APPL-SN-712270	c 52	N79-27836* #
US-PATENT-APPL-SN-680067	c 07	N77-27116* #	US-PATENT-APPL-SN-695973	c 05	N71-12343* #	US-PATENT-APPL-SN-712419	c 35	N78-14364* #
US-PATENT-APPL-SN-680223	c 05	N72-33096* #	US-PATENT-APPL-SN-696374	c 44	N80-29835* #	US-PATENT-APPL-SN-712658	c 07	N71-19773* #
US-PATENT-APPL-SN-68024	c 17	N72-22535* #	US-PATENT-APPL-SN-696679	c 38	N79-14398* #	US-PATENT-APPL-SN-712981	c 31	N78-25256* #
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US-PATENT-APPL-SN-680957	c 35	N77-27366* #	US-PATENT-APPL-SN-697341	c 09	N71-23188* #	US-PATENT-APPL-SN-713188	c 08	N71-33110* #
US-PATENT-APPL-SN-680958	c 74	N78-18905* #	US-PATENT-APPL-SN-698239	c 33	N78-17294* #	US-PATENT-APPL-SN-713188	c 06	N71-27363* #
US-PATENT-APPL-SN-681000	c 34	N78-25350* #	US-PATENT-APPL-SN-698592	c 15	N71-18580* #	US-PATENT-APPL-SN-713161	c 33	N78-13320* #
US-PATENT-APPL-SN-681001	c 74	N76-22993* #	US-PATENT-APPL-SN-698629	c 09	N71-12516* #	US-PATENT-APPL-SN-714158	c 14	N71-15604* #
US-PATENT-APPL-SN-681017	c 44	N77-32583* #	US-PATENT-APPL-SN-698630	c 09	N71-24841* #	US-PATENT-APPL-SN-714296	c 15	N71-17822* #
US-PATENT-APPL-SN-681096	c 44	N77-32582* #	US-PATENT-APPL-SN-698646	c 24	N78-15180* #	US-PATENT-APPL-SN-714595	c 74	N78-14889* #
US-PATENT-APPL-SN-681687	c 03	N71-20273* #	US-PATENT-APPL-SN-699002	c 32	N78-15323* #	US-PATENT-APPL-SN-715975	c 06	N71-11240* #
US-PATENT-APPL-SN-681692	c 08	N71-12506* #	US-PATENT-APPL-SN-699012	c 33	N78-27326* #	US-PATENT-APPL-SN-716183	c 15	N71-18132* #
US-PATENT-APPL-SN-681693	c 09	N71-18598* #	US-PATENT-APPL-SN-700040	c 18	N72-23581* #	US-PATENT-APPL-SN-716734	c 15	N71-17628* #
US-PATENT-APPL-SN-681942	c 18	N71-15688* #	US-PATENT-APPL-SN-700120	c 15	N71-20440* #	US-PATENT-APPL-SN-716795	c 14	N71-20435* #
US-PATENT-APPL-SN-682416	c 34	N77-24423* #	US-PATENT-APPL-SN-700142	c 21	N71-14159* #	US-PATENT-APPL-SN-716885	c 74	N78-33913* #
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US-PATENT-APPL-SN-683073	c 44	N81-29525* #	US-PATENT-APPL-SN-700392	c 11	N73-12264* #	US-PATENT-APPL-SN-717319	c 44	N77-31601* #
US-PATENT-APPL-SN-683073	c 44	N82-28780* #	US-PATENT-APPL-SN-700467	c 52	N79-14749* #	US-PATENT-APPL-SN-717320	c 44	N78-15560* #
US-PATENT-APPL-SN-683465	c 27	N82-29451* #	US-PATENT-APPL-SN-700551	c 10	N71-25139* #	US-PATENT-APPL-SN-717622	c 09	N71-25866* #
US-PATENT-APPL-SN-683507	c 15	N71-15609* #	US-PATENT-APPL-SN-700586	c 15	N71-19570* #	US-PATENT-APPL-SN-718095	c 28	N70-39899* #
US-PATENT-APPL-SN-683606	c 09	N71-24717* #	US-PATENT-APPL-SN-700673	c 39	N77-28511* #	US-PATENT-APPL-SN-718137	c 44	N78-31527* #
US-PATENT-APPL-SN-683612	c 01	N69-39981* #	US-PATENT-APPL-SN-700984	c 11	N71-19494* #	US-PATENT-APPL-SN-718244	c 05	N78-32086* #
US-PATENT-APPL-SN-683613	c 15	N71-15610* #	US-PATENT-APPL-SN-700986	c 15	N69-23190* #	US-PATENT-APPL-SN-718266	c 74	N78-17867* #
US-PATENT-APPL-SN-684045	c 07	N80-26298* #	US-PATENT-APPL-SN-700987	c 12	N71-26387* #	US-PATENT-APPL-SN-718267	c 26	N77-29260* #
US-PATENT-APPL-SN-684083	c 09	N71-24596* #	US-PATENT-APPL-SN-700987	c 09	N71-19610* #	US-PATENT-APPL-SN-718268	c 44	N78-33526* #
US-PATENT-APPL-SN-684171	c 26	N78-18183* #	US-PATENT-APPL-SN-701244	c 05	N72-20096* #	US-PATENT-APPL-SN-718279	c 15	N71-26312* #
US-PATENT-APPL-SN-684178	c 15	N71-23812* #	US-PATENT-APPL-SN-701448	c 52	N78-10686* #	US-PATENT-APPL-SN-718689	c 14	N71-17655* #
US-PATENT-APPL-SN-684209	c 10	N71-19418* #	US-PATENT-APPL-SN-701635	c 12	N71-17578* #	US-PATENT-APPL-SN-718752	c 03	N71-18698* #
US-PATENT-APPL-SN-684807	c 75	N78-27913* #	US-PATENT-APPL-SN-701654	c 03	N71-11049* #	US-PATENT-APPL-SN-718769	c 14	N71-17662* #
US-PATENT-APPL-SN-684894	c 17	N71-26773* #	US-PATENT-APPL-SN-701679	c 02	N71-19287* #	US-PATENT-APPL-SN-719029	c 14	N71-27186* #
US-PATENT-APPL-SN-685027	c 25	N78-10225* #	US-PATENT-APPL-SN-701679	c 07	N73-20174* #	US-PATENT-APPL-SN-719173	c 28	N70-33331* #
US-PATENT-APPL-SN-685463	c 15	N71-23254* #	US-PATENT-APPL-SN-701732	c 24	N71-16095* #	US-PATENT-APPL-SN-719869	c 31	N71-15676* #
US-PATENT-APPL-SN-685473	c 17	N71-16044* #	US-PATENT-APPL-SN-701733	c 10	N71-24844* #	US-PATENT-APPL-SN-719870	c 07	N71-26292* #
US-PATENT-APPL-SN-685497	c 07	N69-39974* #	US-PATENT-APPL-SN-701744	c 21	N71-13958* #	US-PATENT-APPL-SN-720041	c 05	N71-27234* #
US-PATENT-APPL-SN-685748	c 07	N69-39974* #	US-PATENT-APPL-SN-701767	c 07	N71-26101* #	US-PATENT-APPL-SN-720125	c 09	N71-12539* #
US-PATENT-APPL-SN-685750	c 07	N71-11282* #	US-PATENT-APPL-SN-702115	c 71	N79-14871* #	US-PATENT-APPL-SN-720204	c 09	N73-12211* #
US-PATENT-APPL-SN-685750	c 27	N71-16392* #	US-PATENT-APPL-SN-702396	c 31	N71-16345* #	US-PATENT-APPL-SN-720521	c 44	N78-25530* #
US-PATENT-APPL-SN-685764	c 14	N69-27459* #	US-PATENT-APPL-SN-702911	c 15	N71-24675* #	US-PATENT-APPL-SN-720546	c 18	N72-17532* #
US-PATENT-APPL-SN-685766	c 15	N69-21924* #	US-PATENT-APPL-SN-702967	c 06	N71-24739* #	US-PATENT-APPL-SN-721150	c 37	N78-17833* #
US-PATENT-APPL-SN-685787	c 14	N71-18625* #	US-PATENT-APPL-SN-703107	c 37	N77-22479* #	US-PATENT-APPL-SN-721607	c 18	N71-25881* #
US-PATENT-APPL-SN-686209	c 15	N71-23809* #	US-PATENT-APPL-SN-703905	c 32	N80-14281* #	US-PATENT-APPL-SN-723264	c 24	N78-10214* #
US-PATENT-APPL-SN-686248	c 14	N71-26774* #	US-PATENT-APPL-SN-704180	c 36	N78-27402* #	US-PATENT-APPL-SN-723264	c 24	N78-17149* #
US-PATENT-APPL-SN-686296	c 18	N71-14014* #	US-PATENT-APPL-SN-704224	c 18	N71-15469* #	US-PATENT-APPL-SN-723465	c 15	N72-29488* #
US-PATENT-APPL-SN-686331	c 38	N78-32447* #	US-PATENT-APPL-SN-704299	c 10	N71-26577* #	US-PATENT-APPL-SN-723465	c 37	N74-15125* #
US-PATENT-APPL-SN-686344	c 15	N71-17688* #	US-PATENT-APPL-SN-704420	c 05	N71-11202* #	US-PATENT-APPL-SN-723476	c 05	N71-12341* #
US-PATENT-APPL-SN-686449	c 34	N78-18355* #	US-PATENT-APPL-SN-704446	c 10	N71-33407* #	US-PATENT-APPL-SN-723488	c 09	N71-28691* #
US-PATENT-APPL-SN-686796	c 15	N70-33311* #	US-PATENT-APPL-SN-704465	c 07	N71-24741* #	US-PATENT-APPL-SN-723804	c 09	N71-24806* #
US-PATENT-APPL-SN-686933	c 14	N71-17588* #	US-PATENT-APPL-SN-704468	c 25	N79-28253* #	US-PATENT-APPL-SN-723805	c 10	N71-26339* #
US-PATENT-APPL-SN-687251	c 52	N79-12694* #	US-PATENT-APPL-SN-704658	c 10	N71-12554* #	US-PATENT-APPL-SN-723827	c 10	N71-27137* #
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US-PATENT-APPL-SN-752946	c 15	N71-29032* #	US-PATENT-APPL-SN-768662	c 07	N73-25160* #	US-PATENT-APPL-SN-783379	c 15	N71-17653* #
US-PATENT-APPL-SN-752947	c 31	N71-15689* #	US-PATENT-APPL-SN-768795	c 33	N79-10339* #	US-PATENT-APPL-SN-784055	c 15	N72-11390* #
US-PATENT-APPL-SN-753103	c 37	N80-14397* #	US-PATENT-APPL-SN-768942	c 46	N74-23068* #	US-PATENT-APPL-SN-784521	c 14	N71-15620* #
US-PATENT-APPL-SN-753452	c 07	N79-14096* #	US-PATENT-APPL-SN-76899	c 09	N72-22201* #	US-PATENT-APPL-SN-784544	c 15	N72-12408* #
US-PATENT-APPL-SN-753964	c 24	N78-27180* #	US-PATENT-APPL-SN-769148	c				



US-PATENT-APPL-SN-785611	c 15	N71-24600*	US-PATENT-APPL-SN-803822	c 26	N79-22271* #	US-PATENT-APPL-SN-826202	c 37	N79-28551* #
US-PATENT-APPL-SN-785613	c 05	N72-25119* #	US-PATENT-APPL-SN-803822	c 26	N80-32484* #	US-PATENT-APPL-SN-826204	c 37	N79-10420* #
US-PATENT-APPL-SN-785615	c 05	N72-20098* #	US-PATENT-APPL-SN-803823	c 44	N79-11467* #	US-PATENT-APPL-SN-826326	c 46	N79-22679* #
US-PATENT-APPL-SN-785620	c 21	N71-27324*	US-PATENT-APPL-SN-804035	c 35	N79-14348* #	US-PATENT-APPL-SN-82647	c 28	N72-22772* #
US-PATENT-APPL-SN-785710	c 05	N71-24730*	US-PATENT-APPL-SN-804172	c 28	N71-26781*	US-PATENT-APPL-SN-82648	c 12	N72-25292* #
US-PATENT-APPL-SN-785780	c 18	N71-28729*	US-PATENT-APPL-SN-805298	c 10	N71-25899*	US-PATENT-APPL-SN-82649	c 08	N73-30135* #
US-PATENT-APPL-SN-786322	c 32	N79-20296* #	US-PATENT-APPL-SN-805405	c 14	N71-27323*	US-PATENT-APPL-SN-82658	c 30	N70-40309* #
US-PATENT-APPL-SN-7867	c 14	N72-17324* #	US-PATENT-APPL-SN-805406	c 07	N71-24613*	US-PATENT-APPL-SN-827464	c 74	N79-34011* #
US-PATENT-APPL-SN-7868	c 10	N72-17173* #	US-PATENT-APPL-SN-805549	c 35	N79-16246* #	US-PATENT-APPL-SN-827579	c 15	N71-24984* #
US-PATENT-APPL-SN-786913	c 27	N79-12221* #	US-PATENT-APPL-SN-806149	c 27	N71-16223*	US-PATENT-APPL-SN-827597	c 26	N69-33482* #
US-PATENT-APPL-SN-78703	c 15	N73-20514* #	US-PATENT-APPL-SN-806226	c 14	N71-27407*	US-PATENT-APPL-SN-828262	c 37	N79-14383* #
US-PATENT-APPL-SN-78704	c 05	N72-25121* #	US-PATENT-APPL-SN-806440	c 51	N79-10694* #	US-PATENT-APPL-SN-828909	c 28	N71-27094* #
US-PATENT-APPL-SN-78717	c 05	N73-13114* #	US-PATENT-APPL-SN-807597	c 52	N80-16725* #	US-PATENT-APPL-SN-828920	c 35	N72-22095* #
US-PATENT-APPL-SN-787393	c 23	N71-26206*	US-PATENT-APPL-SN-807703	c 37	N78-27424* #	US-PATENT-APPL-SN-828921	c 09	N71-27001* #
US-PATENT-APPL-SN-787410	c 15	N71-19213*	US-PATENT-APPL-SN-807762	c 27	N78-31233* #	US-PATENT-APPL-SN-828983	c 03	N71-24719* #
US-PATENT-APPL-SN-78766	c 05	N74-10907* #	US-PATENT-APPL-SN-808192	c 15	N71-27432*	US-PATENT-APPL-SN-828984	c 08	N71-29033* #
US-PATENT-APPL-SN-787846	c 23	N71-33229*	US-PATENT-APPL-SN-808193	c 31	N71-26537*	US-PATENT-APPL-SN-829314	c 09	N79-31228* #
US-PATENT-APPL-SN-787906	c 03	N71-26084*	US-PATENT-APPL-SN-808462	c 10	N71-27136*	US-PATENT-APPL-SN-829315	c 34	N79-20336* #
US-PATENT-APPL-SN-787911	c 03	N71-28579*	US-PATENT-APPL-SN-808510	c 33	N78-32338* #	US-PATENT-APPL-SN-829316	c 18	N79-11108* #
US-PATENT-APPL-SN-788045	c 24	N79-25142* #	US-PATENT-APPL-SN-808576	c 15	N71-27754*	US-PATENT-APPL-SN-829317	c 52	N80-18690* #
US-PATENT-APPL-SN-788075	c 35	N78-24515* #	US-PATENT-APPL-SN-808577	c 32	N71-25360*	US-PATENT-APPL-SN-829318	c 52	N80-14684* #
US-PATENT-APPL-SN-789043	c 10	N71-26531*	US-PATENT-APPL-SN-808822	c 14	N73-16483* #	US-PATENT-APPL-SN-829318	c 44	N79-11469* #
US-PATENT-APPL-SN-789044	c 14	N72-20381* #	US-PATENT-APPL-SN-808822	c 28	N71-27585*	US-PATENT-APPL-SN-829330	c 44	N80-16452* #
US-PATENT-APPL-SN-789045	c 15	N72-22489* #	US-PATENT-APPL-SN-808980	c 44	N79-17314* #	US-PATENT-APPL-SN-829390	c 03	N71-24681* #
US-PATENT-APPL-SN-789278	c 15	N71-24694*	US-PATENT-APPL-SN-808980	c 44	N80-14474* #	US-PATENT-APPL-SN-829825	c 33	N81-29342* #
US-PATENT-APPL-SN-789903	c 07	N71-28429*	US-PATENT-APPL-SN-810575	c 15	N71-27169*	US-PATENT-APPL-SN-830272	c 33	N72-13437* #
US-PATENT-APPL-SN-790420	c 09	N71-24595*	US-PATENT-APPL-SN-810576	c 15	N73-12492* #	US-PATENT-APPL-SN-830366	c 46	N79-23555* #
US-PATENT-APPL-SN-790637	c 44	N78-25529* #	US-PATENT-APPL-SN-810577	c 25	N82-21269* #	US-PATENT-APPL-SN-830458	c 39	N80-10507* #
US-PATENT-APPL-SN-791267	c 23	N72-17747* #	US-PATENT-APPL-SN-810579	c 09	N72-22203* #	US-PATENT-APPL-SN-830562	c 15	N71-24903* #
US-PATENT-APPL-SN-791268	c 33	N72-17947* #	US-PATENT-APPL-SN-810815	c 33	N74-22864* #	US-PATENT-APPL-SN-830715	c 31	N80-32584* #
US-PATENT-APPL-SN-791288	c 28	N71-25213*	US-PATENT-APPL-SN-81095	c 06	N72-22107* #	US-PATENT-APPL-SN-830846	c 28	N71-26173* #
US-PATENT-APPL-SN-791364	c 14	N72-17328* #	US-PATENT-APPL-SN-81096	c 13	N72-25323* #	US-PATENT-APPL-SN-830978	c 08	N72-11172* #
US-PATENT-APPL-SN-791693	c 05	N71-11203* #	US-PATENT-APPL-SN-811037	c 14	N73-14427* #	US-PATENT-APPL-SN-831118	c 32	N79-20297* #
US-PATENT-APPL-SN-791888	c 23	N71-24725*	US-PATENT-APPL-SN-811038	c 14	N72-20380* #	US-PATENT-APPL-SN-831631	c 07	N80-26298* #
US-PATENT-APPL-SN-792067	c 24	N78-17150* #	US-PATENT-APPL-SN-811401	c 31	N81-25258* #	US-PATENT-APPL-SN-831633	c 05	N80-14107* #
US-PATENT-APPL-SN-792068	c 51	N79-10693* #	US-PATENT-APPL-SN-811509	c 02	N70-33332* #	US-PATENT-APPL-SN-831634	c 05	N79-12061* #
US-PATENT-APPL-SN-792069	c 37	N79-10413* #	US-PATENT-APPL-SN-811542	c 21	N71-24948*	US-PATENT-APPL-SN-832603	c 09	N72-22199* #
US-PATENT-APPL-SN-792623	c 14	N72-23457* #	US-PATENT-APPL-SN-811815	c 44	N78-31525* #	US-PATENT-APPL-SN-833049	c 06	N72-21094* #
US-PATENT-APPL-SN-793657	c 17	N72-28536* #	US-PATENT-APPL-SN-811892	c 14	N71-27090*	US-PATENT-APPL-SN-833637	c 33	N79-24257* #
US-PATENT-APPL-SN-793770	c 25	N71-15562*	US-PATENT-APPL-SN-812447	c 71	N79-20827* #	US-PATENT-APPL-SN-834257	c 32	N80-14281* #
US-PATENT-APPL-SN-793771	c 14	N72-22440* #	US-PATENT-APPL-SN-812998	c 28	N72-22769* #	US-PATENT-APPL-SN-835058	c 21	N72-22619* #
US-PATENT-APPL-SN-793772	c 10	N71-18722*	US-PATENT-APPL-SN-812999	c 05	N71-12345* #	US-PATENT-APPL-SN-835059	c 09	N71-26133* #
US-PATENT-APPL-SN-793823	c 09	N71-33109*	US-PATENT-APPL-SN-813338	c 18	N72-25666* #	US-PATENT-APPL-SN-835060	c 02	N71-26110* #
US-PATENT-APPL-SN-794530	c 15	N72-11386*	US-PATENT-APPL-SN-813488	c 15	N71-28467*	US-PATENT-APPL-SN-835146	c 15	N70-33264* #
US-PATENT-APPL-SN-794968	c 15	N71-27146*	US-PATENT-APPL-SN-813494	c 08	N72-11171*	US-PATENT-APPL-SN-835152	c 28	N80-38199* #
US-PATENT-APPL-SN-795182	c 07	N71-24840*	US-PATENT-APPL-SN-814004	c 33	N79-18193* #	US-PATENT-APPL-SN-835153	c 31	N71-17680* #
US-PATENT-APPL-SN-795217	c 33	N71-25351*	US-PATENT-APPL-SN-814005	c 76	N79-14906* #	US-PATENT-APPL-SN-835419	c 33	N80-18285* #
US-PATENT-APPL-SN-796256	c 52	N80-18691* #	US-PATENT-APPL-SN-814006	c 37	N79-22475* #	US-PATENT-APPL-SN-835544	c 33	N79-14305* #
US-PATENT-APPL-SN-796258	c 52	N82-22875* #	US-PATENT-APPL-SN-814212	c 14	N72-17326* #	US-PATENT-APPL-SN-835628	c 35	N79-14347* #
US-PATENT-APPL-SN-796263	c 27	N79-28307* #	US-PATENT-APPL-SN-814378	c 25	N79-10162* #	US-PATENT-APPL-SN-836280	c 14	N73-14428* #
US-PATENT-APPL-SN-796358	c 05	N72-11085*	US-PATENT-APPL-SN-815366	c 14	N71-28994*	US-PATENT-APPL-SN-836280	c 35	N75-25122* #
US-PATENT-APPL-SN-796360	c 15	N71-24696*	US-PATENT-APPL-SN-815367	c 14	N71-28863*	US-PATENT-APPL-SN-836367	c 09	N71-24804* #
US-PATENT-APPL-SN-796370	c 10	N71-27366*	US-PATENT-APPL-SN-815760	c 15	N71-27068*	US-PATENT-APPL-SN-837259	c 54	N79-24652* #
US-PATENT-APPL-SN-796405	c 14	N71-27185*	US-PATENT-APPL-SN-816733	c 15	N71-27084*	US-PATENT-APPL-SN-837260	c 37	N78-27423* #
US-PATENT-APPL-SN-796685	c 26	N72-28762* #	US-PATENT-APPL-SN-816988	c 14	N71-26199*	US-PATENT-APPL-SN-837377	c 15	N71-26148* #
US-PATENT-APPL-SN-796690	c 07	N72-21119* #	US-PATENT-APPL-SN-817413	c 33	N79-12321* #	US-PATENT-APPL-SN-837378	c 15	N71-24865* #
US-PATENT-APPL-SN-796691	c 10	N71-26334*	US-PATENT-APPL-SN-817415	c 74	N79-20857* #	US-PATENT-APPL-SN-837513	c 44	N81-29525* #
US-PATENT-APPL-SN-797056	c 15	N71-25975*	US-PATENT-APPL-SN-817481	c 09	N72-11225*	US-PATENT-APPL-SN-837513	c 44	N82-28780* #
US-PATENT-APPL-SN-797057	c 15	N70-22192* #	US-PATENT-APPL-SN-817482	c 10	N71-27338*	US-PATENT-APPL-SN-837794	c 28	N80-20402* #
US-PATENT-APPL-SN-797058	c 05	N71-24738*	US-PATENT-APPL-SN-817569	c 06	N69-31244* #	US-PATENT-APPL-SN-837794	c 28	N81-14103* #
US-PATENT-APPL-SN-797059	c 15	N71-28465*	US-PATENT-APPL-SN-818349	c 21	N71-19212*	US-PATENT-APPL-SN-837795	c 36	N80-14384* #
US-PATENT-APPL-SN-797210	c 28	N78-31255* #	US-PATENT-APPL-SN-818916	c 05	N79-17847* #	US-PATENT-APPL-SN-837796	c 35	N79-14345* #
US-PATENT-APPL-SN-797219	c 03	N71-33409*	US-PATENT-APPL-SN-818917	c 32	N79-13214* #	US-PATENT-APPL-SN-837825	c 15	N71-27006* #
US-PATENT-APPL-SN-797794	c 07	N71-12396* #	US-PATENT-APPL-SN-819029	c 20	N82-18314* #	US-PATENT-APPL-SN-837830	c 02	N71-27088* #
US-PATENT-APPL-SN-797795	c 07	N71-27191*	US-PATENT-APPL-SN-819599	c 15	N71-19214*	US-PATENT-APPL-SN-83816	c 44	N74-14784* #
US-PATENT-APPL-SN-797796	c 28	N71-14058* #	US-PATENT-APPL-SN-819898	c 30	N72-17873* #	US-PATENT-APPL-SN-838278	c 60	N74-20836* #
US-PATENT-APPL-SN-798277	c 23	N71-26654*	US-PATENT-APPL-SN-8203	c 15	N70-33180*	US-PATENT-APPL-SN-838308	c 52	N80-27072* #
US-PATENT-APPL-SN-798976	c 52	N81-25661* #	US-PATENT-APPL-SN-820453	c 03	N72-24037* #	US-PATENT-APPL-SN-838336	c 44	N79-11470* #
US-PATENT-APPL-SN-799013	c 09	N71-28468*	US-PATENT-APPL-SN-820498	c 89	N79-10969* #	US-PATENT-APPL-SN-838337	c 31	N79-17029* #
US-PATENT-APPL-SN-799023	c 37	N79-10421* #	US-PATENT-APPL-SN-820499	c 76	N79-23798* #	US-PATENT-APPL-SN-838630	c 14	N71-28993* #
US-PATENT-APPL-SN-799024	c 24	N78-17149* #	US-PATENT-APPL-SN-8204	c 31	N70-37981* #	US-PATENT-APPL-SN-839934	c 07	N72-20140* #
US-PATENT-APPL-SN-799025	c 32	N80-29539* #	US-PATENT-APPL-SN-820963	c 07	N71-19854*	US-PATENT-APPL-SN-839935	c 15	N71-24895* #
US-PATENT-APPL-SN-799026	c 44	N79-11468* #	US-PATENT-APPL-SN-820964	c 15	N71-28740*	US-PATENT-APPL-SN-839941	c 07	N71-26181* #
US-PATENT-APPL-SN-799353	c 09	N71-27232*	US-PATENT-APPL-SN-820965	c 09	N71-13486* #	US-PATENT-APPL-SN-839963	c 27	N79-33316* #
US-PATENT-APPL-SN-799832	c 33	N79-15245* #	US-PATENT-APPL-SN-821586	c 26	N71-14354* #	US-PATENT-APPL-SN-839963	c 27	N81-14078* #
US-PATENT-APPL-SN-800204	c 06	N72-17094* #	US-PATENT-APPL-SN-821681	c 35	N78-27384* #	US-PATENT-APPL-SN-839994	c 28	N71-28915* #
US-PATENT-APPL-SN-800209	c 14	N73-32320* #	US-PATENT-APPL-SN-822039	c 06	N72-25149* #	US-PATENT-APPL-SN-84002	c 08	N73-20217* #
US-PATENT-APPL-SN-800209	c 74	N74-20008* #	US-PATENT-APPL-SN-822088	c 15	N71-27135*	US-PATENT-APPL-SN-840176	c 28	N71-27095* #
US-PATENT-APPL-SN-800973	c 16	N71-24832*	US-PATENT-APPL-SN-822089	c 23	N72-26955* #	US-PATENT-APPL-SN-840308	c 07	N71-33613* #
US-PATENT-APPL-SN-801290	c 37	N79-18318* #	US-PATENT-APPL-SN-822090	c 16	N71-27183*	US-PATENT-APPL-SN-840359	c 23	N71-29125* #
US-PATENT-APPL-SN-801290	c 37	N80-26658* #	US-PATENT-APPL-SN-822518	c 09	N71-13522* #	US-PATENT-APPL-SN-840870	c 15	N71-26189* #
US-PATENT-APPL-SN-801290	c 37	N82-19540* #	US-PATENT-APPL-SN-822519	c 14	N71-28992*	US-PATENT-APPL-SN-840983	c 05	N70-33285* #
US-PATENT-APPL-SN-801312	c 16	N71-15565*	US-PATENT-APPL-SN-822534	c 09	N72-11224*	US-PATENT-APPL-SN-841278	c 33	N77-21316* #
US-PATENT-APPL-SN-801336	c 02	N71-13422* #	US-PATENT-APPL-SN-822779	c 03	N76-32140* #	US-PATENT-APPL-SN-841845	c 14	N73-32317* #
US-PATENT-APPL-SN-801432	c 33	N78-32341* #	US-PATENT-APPL-SN-82280	c 09	N72-25262* #	US-PATENT-APPL-SN-84212	c 27	N74-17283* #
US-PATENT-APPL-SN-801452	c 44	N79-11471* #	US-PATENT-APPL-SN-823061	c 44	N79-23481* #	US-PATENT-APPL-SN-842170	c 11	N70-33278* #
US-PATENT-APPL-SN-801660	c 14	N71-26672*	US-PATENT-APPL-SN-823566	c 74	N79-14891* #	US-PATENT-APPL-SN-842171	c 11	N70-33329* #
US-PATENT-APPL-SN-802812	c 10	N72-22235* #	US-PATENT-APPL-SN-824024	c 44	N79-18443* #	US-PATENT-APPL-SN-84289	c 15	N73-14469* #
US-PATENT-APPL-SN-802813	c 15	N72-22487* #	US-PATENT-APPL-SN-824042	c 23	N71-29123*	US-PATENT-APPL-SN-84290	c 05	N73-20137* #
US-PATENT-APPL-SN-802816	c 31	N71-16346*	US-PATENT-APPL-SN-824628	c 34	N78-17337* #	US-PATENT-APPL-SN-843022	c 11	N70-33287* #
US-PATENT-APPL-SN-802818	c 07	N71-29065*	US-PATENT-APPL-SN-824755	c 09	N70-33182*	US-PATENT-APPL-SN-843032	c 28	N74-18181* #
US-PATENT-APPL-SN-802820	c 10	N71-13545* #	US-PATENT-APPL-SN-825253	c 16	N69-			



US-PATENT-APPL-SN-844315	c 35	N77-21392* #	US-PATENT-APPL-SN-858950	c 35	N78-17359* #	US-PATENT-APPL-SN-880247	c 09	N70-20737* #
US-PATENT-APPL-SN-844344	c 24	N79-14156* #	US-PATENT-APPL-SN-86018	c 23	N71-30292* #	US-PATENT-APPL-SN-880248	c 07	N72-11150* #
US-PATENT-APPL-SN-844346	c 44	N79-11472* #	US-PATENT-APPL-SN-860404	c 37	N81-15364* #	US-PATENT-APPL-SN-880249	c 15	N72-22482* #
US-PATENT-APPL-SN-844355	c 03	N72-26031* #	US-PATENT-APPL-SN-860405	c 26	N79-22271* #	US-PATENT-APPL-SN-880250	c 03	N72-20032* #
US-PATENT-APPL-SN-845365	c 09	N71-13518* #	US-PATENT-APPL-SN-860406	c 24	N79-17916* #	US-PATENT-APPL-SN-880271	c 15	N72-25448* #
US-PATENT-APPL-SN-845584	c 27	N73-22710* #	US-PATENT-APPL-SN-860492	c 09	N72-20199* #	US-PATENT-APPL-SN-880272	c 14	N71-27058* #
US-PATENT-APPL-SN-845807	c 15	N72-11391* #	US-PATENT-APPL-SN-860493	c 14	N72-16283* #	US-PATENT-APPL-SN-880398	c 15	N73-12487* #
US-PATENT-APPL-SN-845971	c 11	N71-28629* #	US-PATENT-APPL-SN-860635	c 28	N72-17843* #	US-PATENT-APPL-SN-880726	c 44	N80-21828* #
US-PATENT-APPL-SN-845972	c 09	N70-11148* #	US-PATENT-APPL-SN-860751	c 08	N72-22165* #	US-PATENT-APPL-SN-880727	c 35	N79-28527* #
US-PATENT-APPL-SN-845973	c 11	N71-24985* #	US-PATENT-APPL-SN-860781	c 08	N72-18184* #	US-PATENT-APPL-SN-880728	c 37	N80-10494* #
US-PATENT-APPL-SN-845974	c 33	N71-25353* #	US-PATENT-APPL-SN-861152	c 18	N72-22567* #	US-PATENT-APPL-SN-880829	c 35	N80-20563* #
US-PATENT-APPL-SN-845990	c 14	N71-27005* #	US-PATENT-APPL-SN-861390	c 14	N70-33322* #	US-PATENT-APPL-SN-880831	c 11	N72-20244* #
US-PATENT-APPL-SN-845991	c 14	N71-29134* #	US-PATENT-APPL-SN-861391	c 28	N79-28342* #	US-PATENT-APPL-SN-880838	c 37	N79-28549* #
US-PATENT-APPL-SN-847023	c 31	N70-37938* #	US-PATENT-APPL-SN-861392	c 44	N79-12541* #	US-PATENT-APPL-SN-880885	c 07	N72-12080* #
US-PATENT-APPL-SN-847027	c 03	N70-33343* #	US-PATENT-APPL-SN-861396	c 71	N79-23753* #	US-PATENT-APPL-SN-881041	c 09	N71-24842* #
US-PATENT-APPL-SN-847276	c 37	N81-32510* #	US-PATENT-APPL-SN-861649	c 35	N79-14349* #	US-PATENT-APPL-SN-882122	c 14	N72-22204* #
US-PATENT-APPL-SN-847277	c 31	N79-28370* #	US-PATENT-APPL-SN-862878	c 14	N72-17327* #	US-PATENT-APPL-SN-882577	c 07	N71-27056* #
US-PATENT-APPL-SN-847278	c 34	N79-20335* #	US-PATENT-APPL-SN-862880	c 09	N82-29330* #	US-PATENT-APPL-SN-883090	c 44	N80-29834* #
US-PATENT-APPL-SN-847596	c 15	N70-10867* #	US-PATENT-APPL-SN-862921	c 24	N79-31347* #	US-PATENT-APPL-SN-883094	c 54	N79-24651* #
US-PATENT-APPL-SN-847815	c 52	N75-15270* #	US-PATENT-APPL-SN-863276	c 31	N71-29050* #	US-PATENT-APPL-SN-883523	c 09	N72-33204* #
US-PATENT-APPL-SN-848282	c 06	N70-11251* #	US-PATENT-APPL-SN-863280	c 46	N80-14603* #	US-PATENT-APPL-SN-883524	c 09	N72-21246* #
US-PATENT-APPL-SN-848325	c 06	N70-11252* #	US-PATENT-APPL-SN-863638	c 16	N72-12440* #	US-PATENT-APPL-SN-883961	c 25	N80-16116* #
US-PATENT-APPL-SN-848351	c 33	N74-20859* #	US-PATENT-APPL-SN-863639	c 24	N72-33681* #	US-PATENT-APPL-SN-884335	c 35	N81-15090* #
US-PATENT-APPL-SN-848403	c 36	N75-27364* #	US-PATENT-APPL-SN-863770	c 15	N72-25451* #	US-PATENT-APPL-SN-885049	c 33	N79-23345* #
US-PATENT-APPL-SN-848418	c 43	N79-26439* #	US-PATENT-APPL-SN-863773	c 44	N79-18444* #	US-PATENT-APPL-SN-885065	c 35	N79-18296* #
US-PATENT-APPL-SN-848419	c 43	N80-23711* #	US-PATENT-APPL-SN-863913	c 44	N79-26475* #	US-PATENT-APPL-SN-885066	c 33	N80-26599* #
US-PATENT-APPL-SN-848420	c 43	N79-25443* #	US-PATENT-APPL-SN-863914	c 14	N71-28995* #	US-PATENT-APPL-SN-885067	c 33	N79-28415* #
US-PATENT-APPL-SN-848421	c 43	N80-14423* #	US-PATENT-APPL-SN-863963	c 09	N72-31235* #	US-PATENT-APPL-SN-885521	c 03	N72-28025* #
US-PATENT-APPL-SN-848428	c 25	N82-21268* #	US-PATENT-APPL-SN-863967	c 10	N71-26085* #	US-PATENT-APPL-SN-885571	c 09	N71-28886* #
US-PATENT-APPL-SN-848481	c 17	N70-33283* #	US-PATENT-APPL-SN-864039	c 11	N71-27036* #	US-PATENT-APPL-SN-885594	c 15	N71-29133* #
US-PATENT-APPL-SN-848776	c 07	N72-22127* #	US-PATENT-APPL-SN-864097	c 15	N72-17454* #	US-PATENT-APPL-SN-887685	c 10	N72-20223* #
US-PATENT-APPL-SN-848793	c 43	N79-31706* #	US-PATENT-APPL-SN-864307	c 15	N72-22483* #	US-PATENT-APPL-SN-887698	c 09	N72-17153* #
US-PATENT-APPL-SN-848794	c 44	N79-24431* #	US-PATENT-APPL-SN-864617	c 07	N71-33606* #	US-PATENT-APPL-SN-887700	c 15	N72-7452* #
US-PATENT-APPL-SN-848805	c 06	N72-17095* #	US-PATENT-APPL-SN-865106	c 07	N72-25171* #	US-PATENT-APPL-SN-887701	c 07	N71-28980* #
US-PATENT-APPL-SN-848810	c 07	N72-11148* #	US-PATENT-APPL-SN-865109	c 03	N72-25021* #	US-PATENT-APPL-SN-888362	c 08	N71-29034* #
US-PATENT-APPL-SN-848811	c 10	N71-26142* #	US-PATENT-APPL-SN-865298	c 09	N72-22202* #	US-PATENT-APPL-SN-888432	c 33	N80-14330* #
US-PATENT-APPL-SN-849106	c 09	N72-22197* #	US-PATENT-APPL-SN-865811	c 14	N71-28933* #	US-PATENT-APPL-SN-888434	c 74	N81-17886* #
US-PATENT-APPL-SN-849274	c 28	N79-14228* #	US-PATENT-APPL-SN-865818	c 09	N72-17155* #	US-PATENT-APPL-SN-888434	c 51	N78-22585* #
US-PATENT-APPL-SN-84961	c 02	N70-34178* #	US-PATENT-APPL-SN-865929	c 15	N72-11388* #	US-PATENT-APPL-SN-889374	c 08	N72-25207* #
US-PATENT-APPL-SN-84962	c 21	N70-36943* #	US-PATENT-APPL-SN-865848	c 15	N71-29132* #	US-PATENT-APPL-SN-889375	c 10	N72-20222* #
US-PATENT-APPL-SN-8497	c 14	N72-11363* #	US-PATENT-APPL-SN-865851	c 09	N72-21243* #	US-PATENT-APPL-SN-889376	c 18	N71-26285* #
US-PATENT-APPL-SN-8498	c 05	N71-24729* #	US-PATENT-APPL-SN-865909	c 09	N71-27053* #	US-PATENT-APPL-SN-889387	c 09	N71-29035* #
US-PATENT-APPL-SN-850504	c 52	N81-14613* #	US-PATENT-APPL-SN-866444	c 14	N72-11364* #	US-PATENT-APPL-SN-889420	c 14	N72-25413* #
US-PATENT-APPL-SN-850504	c 52	N81-29764* #	US-PATENT-APPL-SN-867841	c 25	N72-24753* #	US-PATENT-APPL-SN-889422	c 10	N72-25259* #
US-PATENT-APPL-SN-850507	c 25	N79-14169* #	US-PATENT-APPL-SN-867842	c 11	N72-22246* #	US-PATENT-APPL-SN-889423	c 09	N72-22236* #
US-PATENT-APPL-SN-850586	c 31	N71-25434* #	US-PATENT-APPL-SN-867843	c 23	N72-27728* #	US-PATENT-APPL-SN-889437	c 15	N72-11392* #
US-PATENT-APPL-SN-850587	c 08	N72-21199* #	US-PATENT-APPL-SN-867851	c 14	N71-26161* #	US-PATENT-APPL-SN-889438	c 15	N72-18477* #
US-PATENT-APPL-SN-851298	c 15	N72-12409* #	US-PATENT-APPL-SN-868249	c 15	N72-22484* #	US-PATENT-APPL-SN-889478	c 08	N71-29138* #
US-PATENT-APPL-SN-851394	c 09	N71-24892* #	US-PATENT-APPL-SN-868253	c 33	N80-18286* #	US-PATENT-APPL-SN-889479	c 14	N72-17325* #
US-PATENT-APPL-SN-852131	c 15	N71-24836* #	US-PATENT-APPL-SN-868529	c 14	N72-17323* #	US-PATENT-APPL-SN-889551	c 21	N72-21624* #
US-PATENT-APPL-SN-852843	c 09	N72-22195* #	US-PATENT-APPL-SN-868530	c 08	N72-22167* #	US-PATENT-APPL-SN-889554	c 15	N72-20444* #
US-PATENT-APPL-SN-853349	c 35	N81-33448* #	US-PATENT-APPL-SN-868775	c 05	N72-11084* #	US-PATENT-APPL-SN-889555	c 09	N72-17154* #
US-PATENT-APPL-SN-853641	c 33	N72-25913* #	US-PATENT-APPL-SN-868775	c 09	N72-25261* #	US-PATENT-APPL-SN-889556	c 14	N72-18411* #
US-PATENT-APPL-SN-853677	c 34	N79-31523* #	US-PATENT-APPL-SN-868775	c 09	N73-27150* #	US-PATENT-APPL-SN-889557	c 11	N72-17183* #
US-PATENT-APPL-SN-853679	c 35	N79-14346* #	US-PATENT-APPL-SN-869260	c 05	N72-20097* #	US-PATENT-APPL-SN-889558	c 15	N72-22491* #
US-PATENT-APPL-SN-853705	c 45	N79-12584* #	US-PATENT-APPL-SN-870689	c 05	N73-25125* #	US-PATENT-APPL-SN-889583	c 15	N72-21464* #
US-PATENT-APPL-SN-853716	c 09	N71-24904* #	US-PATENT-APPL-SN-87222	c 06	N72-25148* #	US-PATENT-APPL-SN-889584	c 08	N72-31226* #
US-PATENT-APPL-SN-853746	c 02	N72-11018* #	US-PATENT-APPL-SN-872602	c 05	N72-27103* #	US-PATENT-APPL-SN-889670	c 39	N79-22537* #
US-PATENT-APPL-SN-853763	c 07	N70-12616* #	US-PATENT-APPL-SN-872664	c 09	N72-22200* #	US-PATENT-APPL-SN-889671	c 24	N81-14000* #
US-PATENT-APPL-SN-853763	c 07	N72-33146* #	US-PATENT-APPL-SN-873045	c 08	N70-34675* #	US-PATENT-APPL-SN-889671	c 24	N81-33235* #
US-PATENT-APPL-SN-853855	c 17	N72-22530* #	US-PATENT-APPL-SN-873259	c 14	N72-20379* #	US-PATENT-APPL-SN-889682	c 15	N72-25447* #
US-PATENT-APPL-SN-853855	c 17	N72-28535* #	US-PATENT-APPL-SN-873260	c 08	N72-21200* #	US-PATENT-APPL-SN-891244	c 44	N79-25482* #
US-PATENT-APPL-SN-853856	c 16	N71-29131* #	US-PATENT-APPL-SN-873793	c 33	N72-17948* #	US-PATENT-APPL-SN-891356	c 05	N79-24976* #
US-PATENT-APPL-SN-853983	c 14	N70-33254* #	US-PATENT-APPL-SN-874177	c 14	N72-21407* #	US-PATENT-APPL-SN-891358	c 35	N80-18359* #
US-PATENT-APPL-SN-853984	c 21	N70-33181* #	US-PATENT-APPL-SN-874435	c 11	N72-25284* #	US-PATENT-APPL-SN-891370	c 44	N80-14474* #
US-PATENT-APPL-SN-854815	c 09	N71-24807* #	US-PATENT-APPL-SN-874673	c 11	N71-33612* #	US-PATENT-APPL-SN-891372	c 20	N79-20179* #
US-PATENT-APPL-SN-854920	c 15	N79-26100* #	US-PATENT-APPL-SN-874674	c 27	N82-29454* #	US-PATENT-APPL-SN-891373	c 37	N79-22474* #
US-PATENT-APPL-SN-855004	c 24	N72-11595* #	US-PATENT-APPL-SN-874675	c 27	N82-29452* #	US-PATENT-APPL-SN-891782	c 31	N80-18231* #
US-PATENT-APPL-SN-855364	c 52	N81-27783* #	US-PATENT-APPL-SN-874732	c 27	N82-29455* #	US-PATENT-APPL-SN-89209	c 25	N82-24312* #
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US-PATENT-APPL-SN-856253	c 24	N74-19769* #	US-PATENT-APPL-SN-874795	c 15	N71-26635* #	US-PATENT-APPL-SN-89211	c 07	N73-26119* #
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US-PATENT-APPL-SN-856279	c 07	N72-21118* #	US-PATENT-APPL-SN-87551	c 06	N72-25146* #	US-PATENT-APPL-SN-893383	c 08	N72-25208* #
US-PATENT-APPL-SN-856282	c 08	N72-22166* #	US-PATENT-APPL-SN-875849	c 33	N73-16918* #	US-PATENT-APPL-SN-893385	c 34	N79-24285* #
US-PATENT-APPL-SN-856327	c 05	N72-16015* #	US-PATENT-APPL-SN-87597	c 07	N71-33696* #	US-PATENT-APPL-SN-893857	c 31	N81-27323* #
US-PATENT-APPL-SN-856328	c 14	N72-22441* #	US-PATENT-APPL-SN-876299	c 33	N74-22864* #	US-PATENT-APPL-SN-893857	c 51	N80-70667* #
US-PATENT-APPL-SN-856415	c 09	N71-26182* #	US-PATENT-APPL-SN-876431	c 44	N80-18552* #	US-PATENT-APPL-SN-893857	c 24	N81-17170* #
US-PATENT-APPL-SN-856460	c 25	N79-24073* #	US-PATENT-APPL-SN-876432	c 33	N79-24254* #	US-PATENT-APPL-SN-893857	c 24	N81-26179* #
US-PATENT-APPL-SN-856461	c 34	N79-12359* #	US-PATENT-APPL-SN-876433	c 36	N80-18372* #	US-PATENT-APPL-SN-893903	c 37	N81-24443* #
US-PATENT-APPL-SN-856462	c 34	N80-24573* #	US-PATENT-APPL-SN-876440	c 52	N79-26772* #	US-PATENT-APPL-SN-894213	c 60	N81-15706* #
US-PATENT-APPL-SN-856462	c 44	N81-24519* #	US-PATENT-APPL-SN-876441	c 51	N80-16714* #	US-PATENT-APPL-SN-897828	c 37	N80-23655* #
US-PATENT-APPL-SN-856464	c 36	N79-14362* #	US-PATENT-APPL-SN-876588	c 74	N79-20856* #	US-PATENT-APPL-SN-897829	c 52	N81-29763* #
US-PATENT-APPL-SN-856465	c 44	N80-14473* #	US-PATENT-APPL-SN-877445	c 15	N72-24552* #	US-PATENT-APPL-SN-897830	c 44	N79-25481* #
US-PATENT-APPL-SN-856466	c 72	N80-14877* #	US-PATENT-APPL-SN-877717	c 25	N74-30502* #	US-PATENT-APPL-SN-897832	c 35	N80-21719* #
US-PATENT-APPL-SN-857241	c 46	N74-23069* #	US-PATENT-APPL-SN-877717	c 23	N82-29358* #	US-PATENT-APPL-SN-897832	c 34	N80-20808* #
US-PATENT-APPL-SN-857445	c 05	N71-24728* #	US-PATENT-APPL-SN-877717	c 14	N72-27410* #	US-PATENT-APPL-SN-897832	c 31	N78-24387* #
US-PATENT-APPL-SN-857967	c 15	N72-20443* #	US-PATENT-APPL-SN-877990	c 14	N73-13417* #	US-PATENT-APPL-SN-897840	c 43	N81-26509* #
US-PATENT-APPL-SN-858596	c 35	N78-18395* #	US-PATENT-APPL-SN-878253	c 14	N72-28437* #	US-PATENT-APPL-SN-899123	c 31	N81-14137* #
US-PATENT-APPL-SN-858695	c 11	N72-22247* #	US-PATENT-APPL-SN-878539	c 25	N81-33246* #	US-PATENT-APPL-SN-899288	c 44	N79-14528* #
US-PATENT-APPL-SN-858762	c 08	N79-23097* #	US-PATENT-APPL-SN-878540	c 35	N80-20560* #	US-PATENT-APPL-SN-900659	c 32	N80-18252* #
US-PATENT-APPL-SN-858764	c 33	N79-10338* #	US-PATENT-APPL-SN					



US-PATENT-APPL-SN-901892	c 44	N78-25555* #	US-PATENT-APPL-SN-951828	c 37	N80-29703* #	US-PATENT-CLASS-102-49	c 15	N71-13789* #
US-PATENT-APPL-SN-903019	c 46	N80-10709* #	US-PATENT-APPL-SN-951829	c 33	N80-18287* #	US-PATENT-CLASS-102-49	c 31	N71-15692* #
US-PATENT-APPL-SN-90595	c 03	N72-20031* #	US-PATENT-APPL-SN-951830	c 28	N80-28536* #	US-PATENT-CLASS-102-49	c 31	N71-17730* #
US-PATENT-APPL-SN-906297	c 44	N79-14529* #	US-PATENT-APPL-SN-951831	c 08	N73-12175* #	US-PATENT-CLASS-102-504	c 15	N82-24272* #
US-PATENT-APPL-SN-906298	c 76	N80-18951* #	US-PATENT-APPL-SN-95189	c 74	N77-21941* #	US-PATENT-CLASS-102-50	c 31	N71-24750* #
US-PATENT-APPL-SN-906299	c 27	N80-16158* #	US-PATENT-APPL-SN-953313	c 32	N81-14187* #	US-PATENT-CLASS-102-56R	c 02	N81-14968* #
US-PATENT-APPL-SN-907421	c 37	N81-14318* #	US-PATENT-APPL-SN-953314	c 37	N81-14319* #	US-PATENT-CLASS-102-70 2A	c 28	N74-27425* #
US-PATENT-APPL-SN-907431	c 37	N81-25370* #	US-PATENT-APPL-SN-953389	c 74	N79-14892* #	US-PATENT-CLASS-102-70 2R	c 19	N74-15089* #
US-PATENT-APPL-SN-907435	c 27	N80-10358* #	US-PATENT-APPL-SN-953390	c 74	N80-21138* #	US-PATENT-CLASS-102-70 2	c 09	N71-18599* #
US-PATENT-APPL-SN-907436	c 37	N80-14398* #	US-PATENT-APPL-SN-953391	c 72	N80-33186* #	US-PATENT-CLASS-102-70-2R	c 28	N74-27425* #
US-PATENT-APPL-SN-907479	c 27	N80-24438* #	US-PATENT-APPL-SN-956160	c 32	N80-18253* #	US-PATENT-CLASS-102-70R	c 20	N78-24750* #
US-PATENT-APPL-SN-909100	c 37	N79-28550* #	US-PATENT-APPL-SN-956161	c 27	N79-11215* #	US-PATENT-CLASS-102-90	c 15	N74-23760* #
US-PATENT-APPL-SN-909235	c 07	N81-19115* #	US-PATENT-APPL-SN-956166	c 33	N81-19393* #	US-PATENT-CLASS-102-92 1	c 02	N81-14968* #
US-PATENT-APPL-SN-909608	c 07	N81-19116* #	US-PATENT-APPL-SN-956168	c 27	N81-25209* #	US-PATENT-CLASS-102-95	c 11	N73-32152* #
US-PATENT-APPL-SN-910707	c 32	N80-20448* #	US-PATENT-APPL-SN-956529	c 35	N80-26635* #	US-PATENT-CLASS-102-99	c 28	N77-10213* #
US-PATENT-APPL-SN-910708	c 06	N80-18036* #	US-PATENT-APPL-SN-957452	c 32	N80-24510* #	US-PATENT-CLASS-103 5R	c 04	N73-27052* #
US-PATENT-APPL-SN-910793	c 44	N80-16452* #	US-PATENT-APPL-SN-958573	c 25	N80-20334* #	US-PATENT-CLASS-103-1	c 26	N71-21824* #
US-PATENT-APPL-SN-910794	c 14	N81-26161* #	US-PATENT-APPL-SN-958575	c 27	N80-24437* #	US-PATENT-CLASS-103-37	c 28	N71-14058* #
US-PATENT-APPL-SN-910992	c 52	N78-27750* #	US-PATENT-APPL-SN-961831	c 33	N81-25299* #	US-PATENT-CLASS-103-48	c 15	N71-24042* #
US-PATENT-APPL-SN-910992	c 52	N81-24711* #	US-PATENT-APPL-SN-961832	c 37	N81-24442* #	US-PATENT-CLASS-104-138R	c 85	N74-34672* #
US-PATENT-APPL-SN-91180	c 14	N70-40240* #	US-PATENT-APPL-SN-961833	c 37	N82-21587* #	US-PATENT-CLASS-104-139	c 05	N71-28619* #
US-PATENT-APPL-SN-912276	c 24	N81-29163* #	US-PATENT-APPL-SN-964009	c 02	N80-20224* #	US-PATENT-CLASS-104-1	c 05	N71-28619* #
US-PATENT-APPL-SN-914260	c 44	N79-26474* #	US-PATENT-APPL-SN-964754	c 33	N80-20487* #	US-PATENT-CLASS-104-23FS	c 85	N74-24372* #
US-PATENT-APPL-SN-915050	c 44	N81-12542* #	US-PATENT-APPL-SN-964754	c 44	N81-29524* #	US-PATENT-CLASS-104-83	c 37	N82-21587* #
US-PATENT-APPL-SN-916442	c 14	N72-31446* #	US-PATENT-APPL-SN-965367	c 33	N81-14221* #	US-PATENT-CLASS-105-1A	c 37	N82-21587* #
US-PATENT-APPL-SN-916854	c 07	N81-29129* #	US-PATENT-APPL-SN-965368	c 74	N81-17888* #	US-PATENT-CLASS-105-161	c 43	N79-26439* #
US-PATENT-APPL-SN-916655	c 44	N80-14472* #	US-PATENT-APPL-SN-969755	c 05	N81-19087* #	US-PATENT-CLASS-105-171	c 37	N82-21587* #
US-PATENT-APPL-SN-918533	c 32	N79-23310* #	US-PATENT-APPL-SN-969756	c 37	N81-14317* #	US-PATENT-CLASS-105-180	c 37	N82-21587* #
US-PATENT-APPL-SN-918534	c 33	N80-32650* #	US-PATENT-APPL-SN-969759	c 25	N82-11144* #	US-PATENT-CLASS-105-2R	c 85	N82-33288* #
US-PATENT-APPL-SN-918535	c 35	N80-18357* #	US-PATENT-APPL-SN-969760	c 39	N81-25400* #	US-PATENT-CLASS-105-218R	c 37	N82-21587* #
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US-PATENT-CLASS-117-161UN	c 25	N75-12087* #	US-PATENT-CLASS-123-1A	c 44	N78-33526* #	US-PATENT-CLASS-128 DIG 9	c 52	N80-16725* #
US-PATENT-CLASS-117-161UZ	c 25	N75-12087* #	US-PATENT-CLASS-123-102	c 11	N72-20244* #	US-PATENT-CLASS-128 DIG 9	c 51	N81-14605* #
US-PATENT-CLASS-117-161	c 06	N72-25150* #	US-PATENT-CLASS-123-119A	c 37	N77-31497* #	US-PATENT-CLASS-128-1 2	c 52	N82-22875* #
US-PATENT-CLASS-117-2R	c 32	N74-27612* #	US-PATENT-CLASS-123-119E	c 37	N76-18457* #	US-PATENT-CLASS-128-1A	c 05	N73-32012* #
US-PATENT-CLASS-117-200	c 09	N72-25259* #	US-PATENT-CLASS-123-120	c 37	N76-18457* #	US-PATENT-CLASS-128-1R	c 52	N77-25272* #
US-PATENT-CLASS-117-201	c 15	N69-21460* #	US-PATENT-CLASS-123-121	c 37	N76-18457* #	US-PATENT-CLASS-128-1R	c 52	N77-28716* #
US-PATENT-CLASS-117-201	c 18	N71-16046* #	US-PATENT-CLASS-123-122AB	c 28	N72-22772* #	US-PATENT-CLASS-128-1R	c 52	N81-25660* #
US-PATENT-CLASS-117-201	c 03	N72-24037* #	US-PATENT-CLASS-123-122AB	c 37	N77-31497* #	US-PATENT-CLASS-128-142 2	c 54	N76-24900* #
US-PATENT-CLASS-117-201	c 25	N75-26043* #	US-PATENT-CLASS-123-122E	c 07	N77-23106* #	US-PATENT-CLASS-128-142 5	c 05	N71-11190* #
US-PATENT-CLASS-117-211	c 15	N72-25447* #	US-PATENT-CLASS-123-122E	c 37	N78-10467* #	US-PATENT-CLASS-128-142 5	c 05	N71-1203* #
US-PATENT-CLASS-117-212	c 09	N71-20705* #	US-PATENT-CLASS-123-148CB	c 33	N77-28385* #	US-PATENT-CLASS-128-142 5	c 05	N71-17599* #
US-PATENT-CLASS-117-212	c 15	N71-29032* #	US-PATENT-CLASS-123-148DC	c 37	N79-11405* #	US-PATENT-CLASS-128-142 5	c 05	N72-20096* #
US-PATENT-CLASS-117-212	c 26	N72-28762* #	US-PATENT-CLASS-123-148E	c 33	N77-28385* #	US-PATENT-CLASS-128-142 5	c 05	N73-25125* #
US-PATENT-CLASS-117-217	c 15	N72-25447* #	US-PATENT-CLASS-123-148E	c 37	N79-11405* #	US-PATENT-CLASS-128-142 7	c 54	N78-32721* #
US-PATENT-CLASS-117-217	c 26	N72-28762* #	US-PATENT-CLASS-123-179R	c 28	N80-10374* #	US-PATENT-CLASS-128-142R	c 54	N80-10799* #
US-PATENT-CLASS-117-21	c 18	N69-39895* #	US-PATENT-CLASS-123-37	c 37	N77-31497* #	US-PATENT-CLASS-128-145 8	c 54	N75-27761* #
US-PATENT-CLASS-117-224	c 15	N71-28582* #	US-PATENT-CLASS-123-3	c 44	N76-18642* #	US-PATENT-CLASS-128-191R	c 25	N74-12813* #
US-PATENT-CLASS-117-228	c 06	N73-27980* #	US-PATENT-CLASS-123-3	c 44	N76-29700* #	US-PATENT-CLASS-128-191R	c 54	N80-10799* #
US-PATENT-CLASS-117-234	c 76	N79-16678* #	US-PATENT-CLASS-123-3	c 44	N77-10636* #	US-PATENT-CLASS-128-1	c 05	N70-41819* #
US-PATENT-CLASS-117-235	c 76	N79-16678* #	US-PATENT-CLASS-123-3	c 37	N77-31497* #	US-PATENT-CLASS-128-1	c 05	N71-20268* #
US-PATENT-CLASS-117-237	c 76	N79-16678* #	US-PATENT-CLASS-123-3	c 44	N78-33526* #	US-PATENT-CLASS-128-2 05A	c 52	N74-26626* #
US-PATENT-CLASS-117-239	c 76	N79-16678* #	US-PATENT-CLASS-123-3	c 28	N80-10374* #	US-PATENT-CLASS-128-2 05A	c 54	N75-13531* #
US-PATENT-CLASS-117-240	c 76	N79-16678* #	US-PATENT-CLASS-123-41 33	c 07	N77-23106* #	US-PATENT-CLASS-128-2 05E	c 52	N74-27566* #
US-PATENT-CLASS-117-33.3	c 70	N74-13436* #	US-PATENT-CLASS-123-41 33	c 37	N78-10467* #	US-PATENT-CLASS-128-2 05E	c 52	N76-29896* #
US-PATENT-CLASS-117-35R	c 06	N73-13128* #	US-PATENT-CLASS-123-59E	c 37	N77-31497* #	US-PATENT-CLASS-128-2 05F	c 14	N73-32326* #
US-PATENT-CLASS-117-35	c 32	N79-19186* #	US-PATENT-CLASS-123-89A	c 37	N76-18457* #	US-PATENT-CLASS-128-2 05P	c 54	N75-13531* #
US-PATENT-CLASS-117-37	c 15	N72-25452* #	US-PATENT-CLASS-124-11R	c 75	N76-17951* #	US-PATENT-CLASS-128-2 05R	c 05	N73-27941* #
US-PATENT-CLASS-117-38	c 24	N75-33181* #	US-PATENT-CLASS-124-1	c 75	N76-17951* #	US-PATENT-CLASS-128-2 05R	c 52	N76-29895* #
US-PATENT-CLASS-117-43	c 31	N79-21227* #	US-PATENT-CLASS-124-6	c 09	N77-19076* #	US-PATENT-CLASS-128-2 05R	c 52	N79-10724* #
US-PATENT-CLASS-117-45	c 74	N74-20008* #	US-PATENT-CLASS-125-1	c 46	N74-23069* #	US-PATENT-CLASS-128-2 05S	c 52	N74-26626* #
US-PATENT-CLASS-117-46FS	c 24	N75-33181* #	US-PATENT-CLASS-125-21	c 37	N80-29703* #	US-PATENT-CLASS-128-2 05T	c 52	N74-12778* #
US-PATENT-CLASS-117-46	c 15	N71-16077* #	US-PATENT-CLASS-125-23R	c 76	N80-18951* #	US-PATENT-CLASS-128-2 05V	c 35	N76-24525* #
US-PATENT-CLASS-117-47R	c 15	N72-25452* #	US-PATENT-CLASS-125-23R	c 37	N82-32730* #	US-PATENT-CLASS-128-2 05Z	c 54	N75-27760* #
US-PATENT-CLASS-117-50	c 15	N71-15610* #	US-PATENT-CLASS-125-3	c 46	N74-23069* #	US-PATENT-CLASS-128-2 05Z	c 52	N79-18580* #
US-PATENT-CLASS-117-62	c 15	N72-25447* #	US-PATENT-CLASS-126-263	c 44	N77-32581* #	US-PATENT-CLASS-128-2 05	c 05	N70-41329* #
US-PATENT-CLASS-117-62	c 15	N72-25452* #	US-PATENT-CLASS-126-263	c 44	N78-17460* #	US-PATENT-CLASS-128-2 05	c 04	N71-23185* #
US-PATENT-CLASS-117-65 2	c 18	N71-10772* #	US-PATENT-CLASS-126-263	c 44	N80-20808* #	US-PATENT-CLASS-128-2 05	c 05	N71-27234* #
US-PATENT-CLASS-117-66	c 15	N73-32360* #	US-PATENT-CLASS-126-270	c 09	N70-40234* #	US-PATENT-CLASS-128-2 06B	c 05	N75-24716* #
US-PATENT-CLASS-117-69	c 18	N70-36400* #	US-PATENT-CLASS-126-270	c 03	N70-41580* #	US-PATENT-CLASS-128-2 06E	c 52	N76-29896* #
US-PATENT-CLASS-117-69	c 15	N71-16075* #	US-PATENT-CLASS-126-270	c 34	N74-23039* #	US-PATENT-CLASS-128-2 06F	c 52	N74-12778* #
US-PATENT-CLASS-117-6	c 14	N71-20461* #	US-PATENT-CLASS-126-270	c 44	N76-14595* #	US-PATENT-CLASS-128-2 06R	c 05	N73-27941* #
US-PATENT-CLASS-117-6	c 27	N81-15104* #	US-PATENT-CLASS-126-270	c 44	N76-23675* #	US-PATENT-CLASS-128-2 06R	c 52	N76-14757* #
US-PATENT-CLASS-117-72	c 35	N75-25122* #	US-PATENT-CLASS-126-270	c 44	N76-24696* #	US-PATENT-CLASS-128-2 06	c 05	N69-21925* #
US-PATENT-CLASS-1								



US-PATENT-CLASS-128-2.06	c 05	N71-26293*	US-PATENT-CLASS-128-419P	c 52	N76-29896* #	US-PATENT-CLASS-136-236R	c 35	N77-32454* #
US-PATENT-CLASS-128-2.07	c 05	N73-32015* #	US-PATENT-CLASS-128-421	c 52	N82-29863* #	US-PATENT-CLASS-136-236	c 35	N79-14346* #
US-PATENT-CLASS-128-2.07	c 52	N74-20728* #	US-PATENT-CLASS-128-422	c 52	N82-33996* #	US-PATENT-CLASS-136-240	c 35	N77-32454* #
US-PATENT-CLASS-128-2.08	c 05	N69-21473* #	US-PATENT-CLASS-128-62A	c 52	N82-29862* #	US-PATENT-CLASS-136-249	c 44	N81-12542* #
US-PATENT-CLASS-128-2.08	c 05	N73-32015* #	US-PATENT-CLASS-128-639	c 52	N79-27836* #	US-PATENT-CLASS-136-249	c 44	N82-29709* #
US-PATENT-CLASS-128-2.08	c 52	N74-20728* #	US-PATENT-CLASS-128-642	c 52	N80-27072* #	US-PATENT-CLASS-136-249	c 44	N82-31764* #
US-PATENT-CLASS-128-2.1A	c 09	N72-17153* #	US-PATENT-CLASS-128-642	c 52	N81-14612* #	US-PATENT-CLASS-136-24	c 09	N73-32108* #
US-PATENT-CLASS-128-2.1A	c 09	N72-22202* #	US-PATENT-CLASS-128-660	c 52	N79-26771* #	US-PATENT-CLASS-136-255	c 44	N81-29525* #
US-PATENT-CLASS-128-2.1A	c 52	N74-26625* #	US-PATENT-CLASS-128-665	c 52	N81-27783* #	US-PATENT-CLASS-136-258	c 44	N81-19558* #
US-PATENT-CLASS-128-2.1A	c 52	N76-14757* #	US-PATENT-CLASS-128-666	c 52	N80-23969* #	US-PATENT-CLASS-136-258	c 44	N81-29525* #
US-PATENT-CLASS-128-2.1A	c 52	N76-29894* #	US-PATENT-CLASS-128-686	c 52	N82-11770* #	US-PATENT-CLASS-136-261	c 44	N82-26777* #
US-PATENT-CLASS-128-2.1A	c 52	N79-18580* #	US-PATENT-CLASS-128-690	c 52	N80-23969* #	US-PATENT-CLASS-136-262	c 44	N81-29525* #
US-PATENT-CLASS-128-2.1E	c 05	N72-27103* #	US-PATENT-CLASS-128-691	c 52	N82-11770* #	US-PATENT-CLASS-136-28	c 03	N71-10608* #
US-PATENT-CLASS-128-2.1E	c 35	N76-24525* #	US-PATENT-CLASS-128-6	c 52	N80-16725* #	US-PATENT-CLASS-136-290	c 44	N82-26777* #
US-PATENT-CLASS-128-2.1E	c 52	N77-28717* #	US-PATENT-CLASS-128-748	c 52	N80-18691* #	US-PATENT-CLASS-136-291	c 44	N81-12542* #
US-PATENT-CLASS-128-2.1R	c 05	N73-26072* #	US-PATENT-CLASS-128-760	c 52	N80-18690* #	US-PATENT-CLASS-136-30	c 44	N74-19693* #
US-PATENT-CLASS-128-2.1Z	c 35	N76-24525* #	US-PATENT-CLASS-128-760	c 52	N81-29763* #	US-PATENT-CLASS-136-30	c 44	N76-18643* #
US-PATENT-CLASS-128-2.1	c 05	N71-11193* #	US-PATENT-CLASS-128-761	c 52	N81-24711* #	US-PATENT-CLASS-136-30	c 44	N76-29699* #
US-PATENT-CLASS-128-2.1	c 05	N71-12346* #	US-PATENT-CLASS-128-774	c 52	N80-16725* #	US-PATENT-CLASS-136-36	c 44	N74-19692* #
US-PATENT-CLASS-128-2.1	c 05	N71-24729* #	US-PATENT-CLASS-128-774	c 52	N81-20703* #	US-PATENT-CLASS-136-6LF	c 44	N76-18643* #
US-PATENT-CLASS-128-2.1	c 09	N71-26002* #	US-PATENT-CLASS-128-778	c 52	N82-22875* #	US-PATENT-CLASS-136-6	c 03	N71-26084* #
US-PATENT-CLASS-128-2.1	c 05	N72-25120* #	US-PATENT-CLASS-128-782	c 52	N80-27072* #	US-PATENT-CLASS-136-6	c 03	N72-15986* #
US-PATENT-CLASS-128-2F	c 54	N76-14804* #	US-PATENT-CLASS-128-784	c 52	N82-33996* #	US-PATENT-CLASS-136-6	c 44	N82-24641* #
US-PATENT-CLASS-128-2H	c 52	N76-14757* #	US-PATENT-CLASS-128-80F	c 52	N81-25661* #	US-PATENT-CLASS-136-6	c 44	N82-24642* #
US-PATENT-CLASS-128-2H	c 52	N76-29894* #	US-PATENT-CLASS-128-804	c 52	N82-33996* #	US-PATENT-CLASS-136-6	c 44	N82-24643* #
US-PATENT-CLASS-128-2H	c 52	N77-10780* #	US-PATENT-CLASS-128-89R	c 52	N81-25662* #	US-PATENT-CLASS-136-6	c 44	N82-24644* #
US-PATENT-CLASS-128-2H	c 52	N77-14736* #	US-PATENT-CLASS-128-903	c 52	N80-18691* #	US-PATENT-CLASS-136-79	c 03	N72-20032* #
US-PATENT-CLASS-128-2N	c 05	N72-25122* #	US-PATENT-CLASS-128-92C	c 27	N78-17215* #	US-PATENT-CLASS-136-81	c 03	N72-20032* #
US-PATENT-CLASS-128-2N	c 05	N73-13114* #	US-PATENT-CLASS-128-92G	c 27	N78-17215* #	US-PATENT-CLASS-136-83R	c 03	N72-20034* #
US-PATENT-CLASS-128-2P	c 52	N76-29894* #	US-PATENT-CLASS-129-16 7	c 08	N71-15908* #	US-PATENT-CLASS-136-83R	c 44	N76-18641* #
US-PATENT-CLASS-128-2R	c 09	N72-22202* #	US-PATENT-CLASS-13-20	c 11	N72-23215* #	US-PATENT-CLASS-136-83	c 03	N71-28579* #
US-PATENT-CLASS-128-2R	c 52	N79-12694* #	US-PATENT-CLASS-13-20	c 12	N79-26075* #	US-PATENT-CLASS-136-86A	c 44	N76-27664* #
US-PATENT-CLASS-128-2S	c 52	N74-10975* #	US-PATENT-CLASS-13-22	c 12	N79-26075* #	US-PATENT-CLASS-136-86S	c 44	N76-18641* #
US-PATENT-CLASS-128-2S	c 52	N74-27864* #	US-PATENT-CLASS-13-24	c 12	N79-26075* #	US-PATENT-CLASS-136-86	c 03	N71-11052* #
US-PATENT-CLASS-128-2S	c 33	N75-31329* #	US-PATENT-CLASS-13-26	c 33	N71-15625* #	US-PATENT-CLASS-136-86	c 03	N71-20904* #
US-PATENT-CLASS-128-2S	c 33	N76-19338* #	US-PATENT-CLASS-13-26	c 14	N71-23267* #	US-PATENT-CLASS-136-86	c 15	N71-23022* #
US-PATENT-CLASS-128-2S	c 52	N76-29895* #	US-PATENT-CLASS-13-31	c 11	N72-23215* #	US-PATENT-CLASS-136-86	c 03	N71-29044* #
US-PATENT-CLASS-128-2S	c 52	N76-29896* #	US-PATENT-CLASS-13-31	c 31	N74-27900* #	US-PATENT-CLASS-136-89AC	c 44	N77-31601* #
US-PATENT-CLASS-128-2V	c 52	N74-20726* #	US-PATENT-CLASS-13-35	c 33	N71-24145* #	US-PATENT-CLASS-136-89CA	c 44	N79-25482* #
US-PATENT-CLASS-128-2V	c 35	N75-12271* #	US-PATENT-CLASS-134-137	c 37	N82-12441* #	US-PATENT-CLASS-136-89CC	c 44	N78-25527* #
US-PATENT-CLASS-128-2V	c 54	N75-27760* #	US-PATENT-CLASS-134-17	c 43	N81-26509* #	US-PATENT-CLASS-136-89CC	c 44	N78-25529* #
US-PATENT-CLASS-128-2V	c 52	N79-14751* #	US-PATENT-CLASS-134-21	c 37	N76-18456* #	US-PATENT-CLASS-136-89CC	c 44	N79-11467* #
US-PATENT-CLASS-128-2V	c 52	N79-18580* #	US-PATENT-CLASS-134-37	c 37	N76-18456* #	US-PATENT-CLASS-136-89CC	c 44	N79-17314* #
US-PATENT-CLASS-128-203	c 54	N76-24900* #	US-PATENT-CLASS-135-1	c 32	N70-36536* #	US-PATENT-CLASS-136-89CC	c 44	N79-25482* #
US-PATENT-CLASS-128-204 18	c 51	N81-14605* #	US-PATENT-CLASS-136-100R	c 03	N72-20034* #	US-PATENT-CLASS-136-89CC	c 44	N79-31752* #
US-PATENT-CLASS-128-206F	c 14	N73-24473* #	US-PATENT-CLASS-136-114	c 44	N76-14601* #	US-PATENT-CLASS-136-89H	c 44	N78-25528* #
US-PATENT-CLASS-128-207 14	c 51	N81-14605* #	US-PATENT-CLASS-136-132	c 03	N71-11053* #	US-PATENT-CLASS-136-89H	c 44	N78-25529* #
US-PATENT-CLASS-128-207 28	c 51	N81-14605* #	US-PATENT-CLASS-136-132	c 03	N71-22974* #	US-PATENT-CLASS-136-89PC	c 44	N79-25482* #
US-PATENT-CLASS-128-212	c 54	N80-10799* #	US-PATENT-CLASS-136-133	c 15	N69-24320* #	US-PATENT-CLASS-136-89PC	c 44	N79-31753* #
US-PATENT-CLASS-128-214D	c 52	N79-14749* #	US-PATENT-CLASS-136-133	c 03	N71-23006* #	US-PATENT-CLASS-136-89P	c 44	N77-31601* #
US-PATENT-CLASS-128-214E	c 52	N74-22771* #	US-PATENT-CLASS-136-133	c 03	N72-15986* #	US-PATENT-CLASS-136-89P	c 44	N78-25528* #
US-PATENT-CLASS-128-214F	c 37	N77-28487* #	US-PATENT-CLASS-136-135	c 03	N72-15986* #	US-PATENT-CLASS-136-89P	c 44	N78-25529* #
US-PATENT-CLASS-128-230	c 52	N75-33640* #	US-PATENT-CLASS-136-143	c 44	N76-29699* #	US-PATENT-CLASS-136-89P	c 44	N78-27515* #
US-PATENT-CLASS-128-236	c 51	N81-14605* #	US-PATENT-CLASS-136-146	c 03	N69-21337* #	US-PATENT-CLASS-136-89P	c 44	N79-17314* #
US-PATENT-CLASS-128-24A	c 05	N73-27062* #	US-PATENT-CLASS-136-146	c 24	N76-14204* #	US-PATENT-CLASS-136-89P	c 44	N80-14474* #
US-PATENT-CLASS-128-24A	c 54	N75-27760* #	US-PATENT-CLASS-136-148	c 24	N76-14204* #	US-PATENT-CLASS-136-89SG	c 44	N78-24609* #
US-PATENT-CLASS-128-24	c 05	N71-24738* #	US-PATENT-CLASS-136-148	c 44	N82-24645* #	US-PATENT-CLASS-136-89SG	c 44	N80-24741* #
US-PATENT-CLASS-128-25R	c 37	N74-18127* #	US-PATENT-CLASS-136-162	c 44	N76-14601* #	US-PATENT-CLASS-136-89SJ	c 44	N78-13526* #
US-PATENT-CLASS-128-25	c 05	N71-24738* #	US-PATENT-CLASS-136-166	c 03	N71-23336* #	US-PATENT-CLASS-136-89SJ	c 44	N79-11467* #
US-PATENT-CLASS-128-26	c 52	N76-19785* #	US-PATENT-CLASS-136-166	c 03	N72-20032* #	US-PATENT-CLASS-136-89SJ	c 44	N79-14528* #
US-PATENT-CLASS-128-272	c 15	N71-24835* #	US-PATENT-CLASS-136-170	c 03	N71-11051* #	US-PATENT-CLASS-136-89SJ	c 44	N79-25482* #
US-PATENT-CLASS-128-272	c 52	N79-14749* #	US-PATENT-CLASS-136-175	c 03	N72-20034* #	US-PATENT-CLASS-136-89	c 03	N69-24267* #
US-PATENT-CLASS-128-275	c 15	N71-24835* #	US-PATENT-CLASS-136-179	c 03	N70-18664* #	US-PATENT-CLASS-136-89	c 03	N71-11049* #
US-PATENT-CLASS-128-275	c 52	N81-29763* #	US-PATENT-CLASS-136-182	c 03	N71-10728* #	US-PATENT-CLASS-136-89	c 03	N71-11050* #
US-PATENT-CLASS-128-276	c 52	N80-14684* #	US-PATENT-CLASS-136-182	c 03	N71-20407* #	US-PATENT-CLASS-136-89	c 03	N71-11056* #
US-PATENT-CLASS-128-276	c 52	N80-18690* #	US-PATENT-CLASS-136-182	c 03	N71-20491* #	US-PATENT-CLASS-136-89	c 03	N71-18698* #
US-PATENT-CLASS-128-280	c 24	N82-29362* #	US-PATENT-CLASS-136-182	c 44	N74-27519* #	US-PATENT-CLASS-136-89	c 03	N71-19545* #
US-PATENT-CLASS-128-283	c 05	N69-23192* #	US-PATENT-CLASS-136-182	c 44	N76-14601* #	US-PATENT-CLASS-136-89	c 03	N71-20492* #
US-PATENT-CLASS-128-283	c 24	N82-29362* #	US-PATENT-CLASS-136-202	c 09	N72-12136* #	US-PATENT-CLASS-136-89	c 03	N71-20895* #
US-PATENT-CLASS-128-284	c 24	N82-29362* #	US-PATENT-CLASS-136-202	c 03	N72-26031* #	US-PATENT-CLASS-136-89	c 26	N71-23043* #
US-PATENT-CLASS-128-285	c 24	N82-29362* #	US-PATENT-CLASS-136-202	c 44	N76-16612* #	US-PATENT-CLASS-136-89	c 03	N71-23187* #
US-PATENT-CLASS-128-288	c 24	N82-29362* #	US-PATENT-CLASS-136-202	c 35	N77-32454* #	US-PATENT-CLASS-136-89	c 03	N71-23449* #
US-PATENT-CLASS-128-291	c 24	N82-29362* #	US-PATENT-CLASS-136-202	c 35	N79-14346* #	US-PATENT-CLASS-136-89	c 03	N71-33409* #
US-PATENT-CLASS-128-295	c 05	N72-22093* #	US-PATENT-CLASS-136-206	c 03	N72-11062* #	US-PATENT-CLASS-136-89	c 03	N72-20031* #
US-PATENT-CLASS-128-295	c 52	N81-24711* #	US-PATENT-CLASS-136-206	c 09	N72-12136* #	US-PATENT-CLASS-136-89	c 03	N72-22042* #
US-PATENT-CLASS-128-295	c 52	N81-28740* #	US-PATENT-CLASS-136-206	c 44	N76-14595* #	US-PATENT-CLASS-136-89	c 31	N72-22874* #
US-PATENT-CLASS-128-296	c 24	N82-29362* #	US-PATENT-CLASS-136-206	c 44	N76-31666* #	US-PATENT-CLASS-136-89	c 03	N72-24037* #
US-PATENT-CLASS-128-29	c 05	N70-39922* #	US-PATENT-CLASS-136-210	c 44	N74-19693* #	US-PATENT-CLASS-136-89	c 09	N72-25259* #
US-PATENT-CLASS-128-2	c 05	N73-27062* #	US-PATENT-CLASS-136-210	c 44	N76-16612* #	US-PATENT-CLASS-136-89	c 03	N72-27053* #
US-PATENT-CLASS-128-303R	c 52	N77-28716* #	US-PATENT-CLASS-136-211	c 35	N76-15434* #	US-PATENT-CLASS-136-89	c 09	N79-32109* #
US-PATENT-CLASS-128-305	c 05	N73-27062* #	US-PATENT-CLASS-136-212	c 35	N76-15434* #	US-PATENT-CLASS-136-89	c 44	N74-14784* #
US-PATENT-CLASS-128-305	c 52	N75-33640* #	US-PATENT-CLASS-136-213	c 14	N69-27459* #	US-PATENT-CLASS-136-89	c 44	N76-14600* #
US-PATENT-CLASS-128-305	c 52	N78-14773* #	US-PATENT-CLASS-136-213	c 34	N74-27861* #	US-PATENT-CLASS-136-89	c 44	N76-28635* #
US-PATENT-CLASS-128-327	c 52	N82-11770* #	US-PATENT-CLASS-136-224	c 14	N73-12447* #	US-PATENT-CLASS-136-89	c 44	N76-31666* #
US-PATENT-CLASS-128-329R	c 52	N79-27836* #	US-PATENT-CLASS-136-225	c 14	N73-24472* #	US-PATENT-CLASS-136-89	c 44	N77-10635* #
US-PATENT-CLASS-128-346	c 52	N81-25660* #	US-PATENT-CLASS-136-225	c 35	N76-15434* #	US-PATENT-CLASS-136-89	c 44	N77-14580* #
US-PATENT-CLASS-128-348	c 52	N80-16725* #	US-PATENT-CLASS-136-227	c 09	N72-12136* #	US-PATENT-CLASS-136-89	c 44	N77-19571* #
US-PATENT-CLASS-128-379	c 52	N77-14736* #	US-PATENT-CLASS-136-228	c 33	N71-15568* #	US-PATENT-CLASS-136-89	c 44	N79-11468* #
US-PATENT-CLASS-128-400	c 52	N77-14736* #	US-PATENT-CLASS-136-230	c 14	N71-23039* #	US-PATENT-CLASS-136-90	c 44	N76-14601* #
US-PATENT-CLASS-128-402	c 05	N72-20096* #	US-PATENT-CLASS-136-230	c 34	N74-27861* #	US-PATENT-CLASS-137-DIG 9	c 54	N76-24900* #
US-PATENT-CLASS-128-402	c 52	N77-14736* #	US-PATENT-CLASS-136-232	c 35	N77-14409* #	US-PATENT-CLASS-137-101	c 07	N77-23108* #
US-PATENT-CLASS-128-410	c 52	N77-28717* #	US-PATENT-CLASS-136-233	c 14	N72-27410* #	US-PATENT-CLASS-137-104	c 37	N78-10467* #
US-PATENT-CLASS-128-417	c 05	N72-25120* #	US-PATENT-CLASS-136-233	c 14	N73-13417* #	US-PATENT-CLASS-137-110	c 54	N76-24900* #
US-PATENT-CLASS-128-417	c 05	N72-27103* #	US-PATENT-CLASS-136-233	c 14	N73-13417* #	US-PATENT-CLASS-137-13	c 15	N71-15967* #
US-PATENT-CLASS-128-418	c 52	N76-29896* #	US-PATENT-CLASS-136-233	c 34	N74-27861* #	US-PATENT-CLASS-137-13	c 15	N72-33477* #
US								



US-PATENT-CLASS-137-15 1	c 02	N74-20646* #	US-PATENT-CLASS-138-43	c 15	N71-19213*	US-PATENT-CLASS-149-2	c 12	N70-40124* #
US-PATENT-CLASS-137-15 1	c 07	N74-31270* #	US-PATENT-CLASS-138-45	c 15	N71-18580*	US-PATENT-CLASS-149-36	c 27	N72-25699* #
US-PATENT-CLASS-137-15 1	c 07	N75-24736* #	US-PATENT-CLASS-138-45	c 15	N73-13462* #	US-PATENT-CLASS-149-36	c 27	N73-16764* #
US-PATENT-CLASS-137-15 1	c 07	N77-18154* #	US-PATENT-CLASS-138-46	c 12	N71-18615*	US-PATENT-CLASS-149-36	c 06	N73-30097* #
US-PATENT-CLASS-137-15 1	c 07	N79-14096* #	US-PATENT-CLASS-138-46	c 15	N71-18580*	US-PATENT-CLASS-149-36	c 24	N76-14203* #
US-PATENT-CLASS-137-15 1	c 05	N79-24976* #	US-PATENT-CLASS-138-96R	c 37	N79-22474* #	US-PATENT-CLASS-149-37	c 44	N80-20808* #
US-PATENT-CLASS-137-15 1	c 07	N81-14999* #	US-PATENT-CLASS-139-425R	c 28	N72-11708*	US-PATENT-CLASS-149-42	c 20	N78-32179* #
US-PATENT-CLASS-137-15 2	c 02	N74-20646* #	US-PATENT-CLASS-140-105	c 15	N72-12408*	US-PATENT-CLASS-149-43	c 20	N78-32179* #
US-PATENT-CLASS-137-15 2	c 35	N76-14431* #	US-PATENT-CLASS-140-123	c 15	N71-15918*	US-PATENT-CLASS-149-44	c 20	N78-32179* #
US-PATENT-CLASS-137-154	c 15	N73-27406* #	US-PATENT-CLASS-140-124	c 15	N71-10809* #	US-PATENT-CLASS-149-60	c 28	N74-33209* #
US-PATENT-CLASS-137-177	c 20	N80-10278* #	US-PATENT-CLASS-141-197	c 35	N78-10428* #	US-PATENT-CLASS-149-76	c 28	N74-33209* #
US-PATENT-CLASS-137-197	c 15	N70-41646* #	US-PATENT-CLASS-141-23	c 35	N72-21465* #	US-PATENT-CLASS-149-85	c 20	N78-32179* #
US-PATENT-CLASS-137-197	c 35	N78-12390* #	US-PATENT-CLASS-141-258	c 14	N71-27005*	US-PATENT-CLASS-149-88	c 20	N78-32179* #
US-PATENT-CLASS-137-1	c 12	N70-38997* #	US-PATENT-CLASS-141-4	c 35	N78-10428* #	US-PATENT-CLASS-149-92	c 28	N78-31255* #
US-PATENT-CLASS-137-1	c 15	N73-27406* #	US-PATENT-CLASS-141-5	c 33	N71-20834*	US-PATENT-CLASS-149-92	c 27	N72-25699* #
US-PATENT-CLASS-137-207	c 34	N77-30399* #	US-PATENT-CLASS-141-91	c 12	N71-21089*	US-PATENT-CLASS-149-93	c 28	N78-31255* #
US-PATENT-CLASS-137-209	c 34	N77-30399* #	US-PATENT-CLASS-148-1 5	c 26	N71-10607* #	US-PATENT-CLASS-15-143	c 15	N72-11390*
US-PATENT-CLASS-137-209	c 20	N80-10278* #	US-PATENT-CLASS-148-1 5	c 26	N71-23654*	US-PATENT-CLASS-15-210	c 15	N72-11390*
US-PATENT-CLASS-137-340	c 15	N70-34817* #	US-PATENT-CLASS-148-1 5	c 44	N80-29835* #	US-PATENT-CLASS-15-230 16	c 37	N79-10422* #
US-PATENT-CLASS-137-340	c 15	N70-35087* #	US-PATENT-CLASS-148-1 5	c 33	N81-26360* #	US-PATENT-CLASS-15-230 17	c 37	N79-10422* #
US-PATENT-CLASS-137-341	c 12	N71-17661* #	US-PATENT-CLASS-148-1 5	c 44	N82-26777* #	US-PATENT-CLASS-15-411	c 14	N73-30395* #
US-PATENT-CLASS-137-375	c 37	N80-23654* #	US-PATENT-CLASS-148-1 5	c 44	N82-29709* #	US-PATENT-CLASS-150-1	c 52	N79-14749* #
US-PATENT-CLASS-137-397	c 05	N73-26472* #	US-PATENT-CLASS-148-12 4	c 15	N73-13465* #	US-PATENT-CLASS-151-41.76	c 37	N80-23653* #
US-PATENT-CLASS-137-469	c 05	N72-20097* #	US-PATENT-CLASS-148-12 7A	c 26	N79-22721* #	US-PATENT-CLASS-152-11	c 31	N71-18611* #
US-PATENT-CLASS-137-484.2	c 34	N78-25351* #	US-PATENT-CLASS-148-12 7N	c 26	N78-24333* #	US-PATENT-CLASS-152-225	c 15	N71-27091* #
US-PATENT-CLASS-137-487 5	c 14	N73-13418* #	US-PATENT-CLASS-148-12F	c 26	N77-20201* #	US-PATENT-CLASS-152-250	c 15	N71-27091* #
US-PATENT-CLASS-137-491	c 15	N69-21924* #	US-PATENT-CLASS-148-121	c 76	N79-22071* #	US-PATENT-CLASS-152-330RF	c 37	N81-24443* #
US-PATENT-CLASS-137-493	c 52	N81-25660* #	US-PATENT-CLASS-148-125	c 26	N79-16678* #	US-PATENT-CLASS-152-353R	c 37	N81-24443* #
US-PATENT-CLASS-137-495	c 15	N70-38603* #	US-PATENT-CLASS-148-126	c 26	N78-24333* #	US-PATENT-CLASS-152-353R	c 37	N81-24443* #
US-PATENT-CLASS-137-496	c 15	N71-22706* #	US-PATENT-CLASS-148-126	c 17	N71-24142*	US-PATENT-CLASS-152-379 4	c 37	N81-24443* #
US-PATENT-CLASS-137-501	c 34	N78-25351* #	US-PATENT-CLASS-148-126	c 18	N71-26153*	US-PATENT-CLASS-156 307 7	c 27	N82-11206* #
US-PATENT-CLASS-137-505 12	c 14	N71-16625* #	US-PATENT-CLASS-148-126	c 26	N74-10521* #	US-PATENT-CLASS-156-DIG 6-8	c 76	N79-23798* #
US-PATENT-CLASS-137-505 16	c 34	N78-25351* #	US-PATENT-CLASS-148-127	c 26	N75-29236* #	US-PATENT-CLASS-156-DIG 62	c 76	N79-23919* #
US-PATENT-CLASS-137-505 25	c 37	N78-25426* #	US-PATENT-CLASS-148-131	c 26	N80-28492* #	US-PATENT-CLASS-156-DIG 64	c 76	N79-11920* #
US-PATENT-CLASS-137-505 38	c 37	N75-15050* #	US-PATENT-CLASS-148-162	c 14	N71-25892*	US-PATENT-CLASS-156-DIG 66	c 44	N80-24741* #
US-PATENT-CLASS-137-515 3	c 37	N76-14463* #	US-PATENT-CLASS-148-174	c 26	N77-20201* #	US-PATENT-CLASS-156-DIG 65	c 76	N80-32245* #
US-PATENT-CLASS-137-516 27	c 15	N73-30459* #	US-PATENT-CLASS-148-174	c 26	N71-29156* #	US-PATENT-CLASS-156-DIG 88	c 76	N79-11920* #
US-PATENT-CLASS-137-535	c 15	N73-30459* #	US-PATENT-CLASS-148-175	c 44	N76-28635* #	US-PATENT-CLASS-156-DIG 88	c 76	N79-11920* #
US-PATENT-CLASS-137-535	c 05	N73-32014* #	US-PATENT-CLASS-148-175	c 44	N78-24609* #	US-PATENT-CLASS-156-DIG 96	c 76	N80-32244* #
US-PATENT-CLASS-137-538	c 05	N73-25125* #	US-PATENT-CLASS-148-175	c 25	N75-26043* #	US-PATENT-CLASS-156-DIG 96	c 76	N80-32244* #
US-PATENT-CLASS-137-539	c 15	N70-41811* #	US-PATENT-CLASS-148-187	c 76	N76-25049* #	US-PATENT-CLASS-156-DIG 96	c 33	N81-19389* #
US-PATENT-CLASS-137-549	c 37	N81-17433* #	US-PATENT-CLASS-148-187	c 44	N76-28635* #	US-PATENT-CLASS-156-104	c 44	N80-18550* #
US-PATENT-CLASS-137-550	c 37	N76-14463* #	US-PATENT-CLASS-148-188	c 44	N82-28780* #	US-PATENT-CLASS-156-154	c 24	N78-17150* #
US-PATENT-CLASS-137-554	c 09	N71-23191* #	US-PATENT-CLASS-148-188	c 26	N72-17820* #	US-PATENT-CLASS-156-157	c 27	N81-14077* #
US-PATENT-CLASS-137-559	c 11	N73-12265* #	US-PATENT-CLASS-148-188	c 14	N72-28438* #	US-PATENT-CLASS-156-160	c 33	N81-14077* #
US-PATENT-CLASS-137-574	c 20	N80-10278* #	US-PATENT-CLASS-148-188	c 33	N81-26360* #	US-PATENT-CLASS-156-161	c 24	N81-29163* #
US-PATENT-CLASS-137-576	c 20	N80-10278* #	US-PATENT-CLASS-148-20 3	c 24	N71-10560* #	US-PATENT-CLASS-156-163	c 27	N81-14077* #
US-PATENT-CLASS-137-582	c 32	N71-16103* #	US-PATENT-CLASS-148-2	c 09	N71-12513* #	US-PATENT-CLASS-156-165	c 24	N81-29163* #
US-PATENT-CLASS-137-582	c 32	N71-16106* #	US-PATENT-CLASS-148-2	c 44	N79-11468* #	US-PATENT-CLASS-156-172	c 74	N75-12732* #
US-PATENT-CLASS-137-582	c 15	N71-19569* #	US-PATENT-CLASS-148-32 5	c 26	N77-20201* #	US-PATENT-CLASS-156-172	c 15	N71-17651* #
US-PATENT-CLASS-137-582	c 15	N73-26472* #	US-PATENT-CLASS-148-32 5	c 26	N79-22271* #	US-PATENT-CLASS-156-18	c 76	N79-21910* #
US-PATENT-CLASS-137-590	c 20	N80-10278* #	US-PATENT-CLASS-148-32 5	c 26	N78-18183* #	US-PATENT-CLASS-156-18	c 26	N73-26752* #
US-PATENT-CLASS-137-594	c 12	N71-18615* #	US-PATENT-CLASS-148-32 5	c 17	N72-22535* #	US-PATENT-CLASS-156-212	c 74	N75-12732* #
US-PATENT-CLASS-137-604	c 15	N73-27406* #	US-PATENT-CLASS-148-32 5	c 26	N77-20201* #	US-PATENT-CLASS-156-212	c 03	N71-26726* #
US-PATENT-CLASS-137-608	c 15	N73-13462* #	US-PATENT-CLASS-148-32 5	c 26	N77-20201* #	US-PATENT-CLASS-156-212	c 24	N80-26388* #
US-PATENT-CLASS-137-614 06	c 37	N79-11402* #	US-PATENT-CLASS-148-32 5	c 26	N78-18183* #	US-PATENT-CLASS-156-212	c 27	N81-14077* #
US-PATENT-CLASS-137-614	c 15	N70-36492* #	US-PATENT-CLASS-148-32 5	c 26	N77-32280* #	US-PATENT-CLASS-156-218	c 24	N80-26388* #
US-PATENT-CLASS-137-615	c 12	N71-16031* #	US-PATENT-CLASS-148-428	c 26	N77-32278* #	US-PATENT-CLASS-156-218	c 54	N74-32546* #
US-PATENT-CLASS-137-624 11	c 35	N78-19466* #	US-PATENT-CLASS-148-6 11	c 26	N80-23419* #	US-PATENT-CLASS-156-229	c 24	N77-28225* #
US-PATENT-CLASS-137-624 14	c 03	N69-21469* #	US-PATENT-CLASS-148-6 16	c 15	N71-24875* #	US-PATENT-CLASS-156-242	c 15	N69-24322* #
US-PATENT-CLASS-137-625 38	c 37	N78-25426* #	US-PATENT-CLASS-148-6 3	c 18	N71-23047* #	US-PATENT-CLASS-156-242	c 37	N76-24575* #
US-PATENT-CLASS-137-625 3	c 37	N78-25426* #	US-PATENT-CLASS-148-6 3	c 17	N71-23828* #	US-PATENT-CLASS-156-245	c 24	N81-33235* #
US-PATENT-CLASS-137-625 4	c 37	N80-23654* #	US-PATENT-CLASS-148-6	c 17	N71-33408* #	US-PATENT-CLASS-156-245	c 31	N74-18089* #
US-PATENT-CLASS-137-625 5	c 37	N71-23051* #	US-PATENT-CLASS-148-6	c 44	N79-18444* #	US-PATENT-CLASS-156-245	c 24	N78-17149* #
US-PATENT-CLASS-137-625 69	c 15	N70-36908* #	US-PATENT-CLASS-148-6	c 19	N71-29040* #	US-PATENT-CLASS-156-247	c 24	N81-33235* #
US-PATENT-CLASS-137-628	c 37	N74-21065* #	US-PATENT-CLASS-149-105	c 76	N79-16678* #	US-PATENT-CLASS-156-250	c 31	N74-18089* #
US-PATENT-CLASS-137-637 05	c 37	N79-11402* #	US-PATENT-CLASS-149-108 4	c 28	N78-31255* #	US-PATENT-CLASS-156-252	c 03	N72-25019* #
US-PATENT-CLASS-137-81 5	c 12	N69-21466* #	US-PATENT-CLASS-149-108.4	c 28	N80-23471* #	US-PATENT-CLASS-156-264	c 24	N81-33235* #
US-PATENT-CLASS-137-81 5	c 15	N71-15609* #	US-PATENT-CLASS-149-109	c 27	N81-15119* #	US-PATENT-CLASS-156-264	c 05	N72-25121* #
US-PATENT-CLASS-137-81 5	c 12	N71-17578* #	US-PATENT-CLASS-149-111	c 28	N70-41897* #	US-PATENT-CLASS-156-264	c 24	N78-17150* #
US-PATENT-CLASS-137-81 5	c 12	N71-17579* #	US-PATENT-CLASS-149-15	c 28	N78-31255* #	US-PATENT-CLASS-156-267	c 24	N81-33235* #
US-PATENT-CLASS-137-81 5	c 10	N71-25899* #	US-PATENT-CLASS-149-17	c 44	N80-20808* #	US-PATENT-CLASS-156-272	c 27	N81-14077* #
US-PATENT-CLASS-137-81 5	c 12	N71-27332* #	US-PATENT-CLASS-149-19 2	c 28	N73-32209* #	US-PATENT-CLASS-156-272	c 27	N80-32516* #
US-PATENT-CLASS-137-81 5	c 12	N71-28741* #	US-PATENT-CLASS-149-19 4	c 28	N80-28536* #	US-PATENT-CLASS-156-278	c 33	N82-26571* #
US-PATENT-CLASS-137-81 5	c 28	N72-22772* #	US-PATENT-CLASS-149-19 4	c 28	N78-31255* #	US-PATENT-CLASS-156-285	c 44	N80-18550* #
US-PATENT-CLASS-137-81 5	c 15	N73-33477* #	US-PATENT-CLASS-149-19 8	c 20	N78-32179* #	US-PATENT-CLASS-156-285	c 15	N71-23052* #
US-PATENT-CLASS-137-81 5	c 28	N73-13773* #	US-PATENT-CLASS-149-19 8	c 28	N78-28342* #	US-PATENT-CLASS-156-285	c 18	N73-30532* #
US-PATENT-CLASS-137-819	c 33	N74-11050* #	US-PATENT-CLASS-149-19 8	c 28	N78-31255* #	US-PATENT-CLASS-156-285	c 31	N74-18089* #
US-PATENT-CLASS-137-819	c 05	N72-20097* #	US-PATENT-CLASS-149-19 8	c 28	N79-14228* #	US-PATENT-CLASS-156-285	c 24	N74-27035* #
US-PATENT-CLASS-137-81	c 14	N73-13418* #	US-PATENT-CLASS-149-19 9	c 28	N79-14228* #	US-PATENT-CLASS-156-285	c 24	N78-17149* #
US-PATENT-CLASS-137-833	c 33	N74-11050* #	US-PATENT-CLASS-149-19 9	c 28	N79-28342* #	US-PATENT-CLASS-156-285	c 24	N78-17150* #
US-PATENT-CLASS-137-840	c 33	N74-11050* #	US-PATENT-CLASS-149-19 9	c 28	N80-28536* #	US-PATENT-CLASS-156-285	c 44	N80-18550* #
US-PATENT-CLASS-137-886	c 37	N81-17433* #	US-PATENT-CLASS-149-19	c 27	N71-14090* #	US-PATENT-CLASS-156-285	c 24	N80-26388* #
US-PATENT-CLASS-137-887	c 37	N81-17433* #	US-PATENT-CLASS-149-19	c 27	N72-25699* #	US-PATENT-CLASS-156-285	c 24	N81-29163* #
US-PATENT-CLASS-138 8R	c 27	N81-15104* #	US-PATENT-CLASS-149-19	c 27	N73-16764* #	US-PATENT-CLASS-156-285	c 24	N81-33235* #
US-PATENT-CLASS-138-103	c 52	N80-16725* #	US-PATENT-CLASS-149-19	c 23	N71-16212* #	US-PATENT-CLASS-156-286	c 37	N76-21554* #
US-PATENT-CLASS-138-113	c 34	N75-12222* #	US-PATENT-CLASS-149-19	c 06	N73-30097* #	US-PATENT-CLASS-156-286	c 37	N76-24575* #
US-PATENT-CLASS-138-114	c 34	N75-12222* #	US-PATENT-CLASS-149-19	c 28	N80-20402* #	US-PATENT-CLASS-156-286	c 37	N78-17150* #
US-PATENT-CLASS-138-119	c 32	N70-41579* #	US-PATENT-CLASS-149-20	c 28	N81-14103* #	US-PATENT-CLASS-156-289	c 24	N78-17149* #
US-PATENT-CLASS-138-133	c 52	N80-16725* #	US-PATENT-CLASS-149-20	c 27	N72-25699* #	US-PATENT-CLASS-156-289	c 24	N78-17150* #
US-PATENT-CLASS-138-148	c 34	N75-12222* #	US-PATENT-CLASS-149-20	c 28	N79-14228* #	US-PATENT-CLASS-156-290	c 24	N81-33235* #
US-PATENT-CLASS-138-178	c 15	N72-20445* #	US-PATENT-CLASS-149-20	c 28	N79-28342* #	US-PATENT-CLASS-156-292	c 24	N80-32516* #
US-PATENT-CLASS-138-33	c 52	N80-16725* #	US-PATENT-CLASS-149-20	c 28	N80-28536* #		c 27	N80-32516* #



US-PATENT-CLASS-156-292	c 24	N81-17170* #	US-PATENT-CLASS-161-69	c 33	N71-24858* #	US-PATENT-CLASS-165-96	c 31	N73-30829* #
US-PATENT-CLASS-156-294	c 37	N81-14317* #	US-PATENT-CLASS-161-7	c 18	N72-25540* #	US-PATENT-CLASS-165-96	c 33	N73-32818* #
US-PATENT-CLASS-156-294	c 24	N81-29163* #	US-PATENT-CLASS-161-7	c 18	N72-25541* #	US-PATENT-CLASS-165-96	c 34	N78-17337* #
US-PATENT-CLASS-156-295	c 27	N81-14077* #	US-PATENT-CLASS-161-89	c 17	N71-28747* #	US-PATENT-CLASS-166-222	c 43	N81-26509* #
US-PATENT-CLASS-156-300	c 24	N78-17150* #	US-PATENT-CLASS-161-92	c 37	N75-26371* #	US-PATENT-CLASS-166-248	c 43	N78-14452* #
US-PATENT-CLASS-156-303	c 44	N80-18550* #	US-PATENT-CLASS-161-93	c 18	N73-12604* #	US-PATENT-CLASS-166-259	c 43	N78-14452* #
US-PATENT-CLASS-156-306	c 24	N78-17150* #	US-PATENT-CLASS-161-93	c 37	N74-18126* #	US-PATENT-CLASS-166-267	c 25	N82-23282* #
US-PATENT-CLASS-156-307 3	c 27	N82-11206* #	US-PATENT-CLASS-162-102	c 24	N76-14204* #	US-PATENT-CLASS-166-303	c 25	N82-23282* #
US-PATENT-CLASS-156-307 5	c 27	N82-11206* #	US-PATENT-CLASS-162-14	c 85	N79-17747* #	US-PATENT-CLASS-166-63	c 46	N79-22679* #
US-PATENT-CLASS-156-308	c 05	N72-25121* #	US-PATENT-CLASS-162-153	c 24	N76-14204* #	US-PATENT-CLASS-166-77	c 43	N81-26509* #
US-PATENT-CLASS-156-309	c 31	N74-18089* #	US-PATENT-CLASS-162-222	c 24	N76-14204* #	US-PATENT-CLASS-169-28	c 12	N72-21310* #
US-PATENT-CLASS-156-309	c 27	N78-17205* #	US-PATENT-CLASS-162-228	c 24	N76-14204* #	US-PATENT-CLASS-169-36	c 12	N72-21310* #
US-PATENT-CLASS-156-311	c 24	N78-17150* #	US-PATENT-CLASS-162-29	c 85	N79-17747* #	US-PATENT-CLASS-169-62	c 31	N81-14137* #
US-PATENT-CLASS-156-312	c 44	N80-18550* #	US-PATENT-CLASS-164-105	c 20	N79-21123* #	US-PATENT-CLASS-169-70	c 31	N81-14137* #
US-PATENT-CLASS-156-315	c 27	N82-24340* #	US-PATENT-CLASS-164-132	c 37	N76-23570* #	US-PATENT-CLASS-173-131	c 15	N73-13463* #
US-PATENT-CLASS-156-320	c 15	N72-11392* #	US-PATENT-CLASS-164-60	c 24	N77-27187* #	US-PATENT-CLASS-173-132	c 37	N76-18454* #
US-PATENT-CLASS-156-323	c 27	N81-14077* #	US-PATENT-CLASS-165-104 14	c 05	N81-26114* #	US-PATENT-CLASS-174-DIG 6	c 26	N73-26752* #
US-PATENT-CLASS-156-329	c 27	N82-29456* #	US-PATENT-CLASS-165-104	c 33	N71-25353* #	US-PATENT-CLASS-174-DIG 6	c 26	N73-32571* #
US-PATENT-CLASS-156-330	c 24	N81-14000* #	US-PATENT-CLASS-165-105	c 09	N71-24807* #	US-PATENT-CLASS-174-DIG 8	c 33	N74-22865* #
US-PATENT-CLASS-156-331 5	c 27	N82-11206* #	US-PATENT-CLASS-165-105	c 33	N71-25353* #	US-PATENT-CLASS-174-106R	c 09	N72-22198* #
US-PATENT-CLASS-156-331	c 37	N74-18126* #	US-PATENT-CLASS-165-105	c 33	N72-17948* #	US-PATENT-CLASS-174-110 3	c 14	N71-27186* #
US-PATENT-CLASS-156-331	c 27	N78-17205* #	US-PATENT-CLASS-165-105	c 31	N73-30829* #	US-PATENT-CLASS-174-111	c 33	N74-27683* #
US-PATENT-CLASS-156-331	c 24	N79-16915* #	US-PATENT-CLASS-165-105	c 28	N73-32606* #	US-PATENT-CLASS-174-115	c 09	N70-38201* #
US-PATENT-CLASS-156-331	c 27	N81-14077* #	US-PATENT-CLASS-165-105	c 34	N74-18552* #	US-PATENT-CLASS-174-117FF	c 09	N72-22198* #
US-PATENT-CLASS-156-338	c 27	N82-24340* #	US-PATENT-CLASS-165-105	c 34	N75-12222* #	US-PATENT-CLASS-174-126CP	c 26	N73-32571* #
US-PATENT-CLASS-156-344	c 28	N81-14103* #	US-PATENT-CLASS-165-105	c 44	N75-32581* #	US-PATENT-CLASS-174-142	c 33	N80-18286* #
US-PATENT-CLASS-156-345	c 15	N70-42033* #	US-PATENT-CLASS-165-105	c 44	N76-16612* #	US-PATENT-CLASS-174-145	c 33	N76-16332* #
US-PATENT-CLASS-156-379 7	c 33	N82-26571* #	US-PATENT-CLASS-165-105	c 34	N76-17317* #	US-PATENT-CLASS-174-148	c 33	N76-16332* #
US-PATENT-CLASS-156-382	c 37	N76-21554* #	US-PATENT-CLASS-165-105	c 34	N76-27515* #	US-PATENT-CLASS-174-15CA	c 31	N79-17029* #
US-PATENT-CLASS-156-3	c 17	N71-16044* #	US-PATENT-CLASS-165-105	c 34	N77-32413* #	US-PATENT-CLASS-174-15C	c 33	N74-27683* #
US-PATENT-CLASS-156-3	c 15	N71-21404* #	US-PATENT-CLASS-165-105	c 25	N78-10224* #	US-PATENT-CLASS-174-18	c 09	N69-21542* #
US-PATENT-CLASS-156-3	c 15	N71-24047* #	US-PATENT-CLASS-165-105	c 34	N78-17336* #	US-PATENT-CLASS-174-28	c 07	N71-27191* #
US-PATENT-CLASS-156-3	c 06	N72-21094* #	US-PATENT-CLASS-165-105	c 34	N78-17337* #	US-PATENT-CLASS-174-28	c 33	N74-27683* #
US-PATENT-CLASS-156-510	c 15	N71-17687* #	US-PATENT-CLASS-165-105	c 44	N79-18443* #	US-PATENT-CLASS-174-35	c 07	N71-19436* #
US-PATENT-CLASS-156-510	c 03	N72-25019* #	US-PATENT-CLASS-165-105	c 37	N79-28549* #	US-PATENT-CLASS-174-36	c 09	N72-22198* #
US-PATENT-CLASS-156-52	c 31	N79-21226* #	US-PATENT-CLASS-165-105	c 34	N79-31523* #	US-PATENT-CLASS-174-52S	c 15	N73-14469* #
US-PATENT-CLASS-156-545	c 15	N71-24164* #	US-PATENT-CLASS-165-105	c 35	N81-14287* #	US-PATENT-CLASS-174-68 5	c 15	N70-41960* #
US-PATENT-CLASS-156-556	c 37	N76-21554* #	US-PATENT-CLASS-165-106	c 33	N73-32818* #	US-PATENT-CLASS-174-69	c 33	N74-22865* #
US-PATENT-CLASS-156-601	c 76	N77-32919* #	US-PATENT-CLASS-165-106	c 34	N76-17317* #	US-PATENT-CLASS-174-70R	c 33	N74-22865* #
US-PATENT-CLASS-156-601	c 76	N80-32245* #	US-PATENT-CLASS-165-107	c 09	N71-24807* #	US-PATENT-CLASS-174-72	c 03	N69-21539* #
US-PATENT-CLASS-156-602	c 76	N82-30105* #	US-PATENT-CLASS-165-107	c 44	N77-32581* #	US-PATENT-CLASS-174-73R	c 33	N80-18286* #
US-PATENT-CLASS-156-605	c 44	N80-24741* #	US-PATENT-CLASS-165-109	c 35	N74-15093* #	US-PATENT-CLASS-174-84	c 15	N72-17455* #
US-PATENT-CLASS-156-608	c 76	N79-11920* #	US-PATENT-CLASS-165-110	c 44	N76-31667* #	US-PATENT-CLASS-175-1	c 46	N79-22679* #
US-PATENT-CLASS-156-608	c 33	N81-19389* #	US-PATENT-CLASS-165-110	c 77	N75-20139* #	US-PATENT-CLASS-175-26	c 15	N73-32362* #
US-PATENT-CLASS-156-608	c 76	N82-30105* #	US-PATENT-CLASS-165-111	c 77	N75-20139* #	US-PATENT-CLASS-175-310	c 15	N70-42034* #
US-PATENT-CLASS-156-60	c 15	N71-22713* #	US-PATENT-CLASS-165-112	c 33	N71-24276* #	US-PATENT-CLASS-175-323	c 14	N69-21923* #
US-PATENT-CLASS-156-610	c 76	N76-25049* #	US-PATENT-CLASS-165-133	c 33	N71-16277* #	US-PATENT-CLASS-175-78	c 46	N80-10709* #
US-PATENT-CLASS-156-612	c 76	N76-25049* #	US-PATENT-CLASS-165-133	c 33	N71-25353* #	US-PATENT-CLASS-176-11	c 24	N72-33681* #
US-PATENT-CLASS-156-612	c 44	N76-28635* #	US-PATENT-CLASS-165-133	c 33	N72-20915* #	US-PATENT-CLASS-176-11	c 25	N76-27383* #
US-PATENT-CLASS-156-613	c 76	N76-25049* #	US-PATENT-CLASS-165-134	c 44	N76-23675* #	US-PATENT-CLASS-176-11	c 25	N76-29379* #
US-PATENT-CLASS-156-613	c 44	N76-28635* #	US-PATENT-CLASS-165-134	c 34	N78-17336* #	US-PATENT-CLASS-176-11	c 25	N78-27226* #
US-PATENT-CLASS-156-614	c 44	N76-28635* #	US-PATENT-CLASS-165-138	c 09	N71-24807* #	US-PATENT-CLASS-176-14	c 25	N76-29379* #
US-PATENT-CLASS-156-617SP	c 76	N79-11920* #	US-PATENT-CLASS-165-141	c 28	N73-32606* #	US-PATENT-CLASS-176-169	c 22	N73-32528* #
US-PATENT-CLASS-156-617SP	c 76	N79-23798* #	US-PATENT-CLASS-165-146	c 34	N79-13289* #	US-PATENT-CLASS-176-16	c 25	N76-27383* #
US-PATENT-CLASS-156-617SP	c 44	N80-24741* #	US-PATENT-CLASS-165-155	c 33	N72-20915* #	US-PATENT-CLASS-176-16	c 25	N76-29379* #
US-PATENT-CLASS-156-617SP	c 76	N80-32245* #	US-PATENT-CLASS-165-158	c 33	N72-20915* #	US-PATENT-CLASS-176-16	c 25	N78-27226* #
US-PATENT-CLASS-156-619	c 76	N77-32919* #	US-PATENT-CLASS-165-161	c 33	N72-20915* #	US-PATENT-CLASS-176-22	c 73	N78-28913* #
US-PATENT-CLASS-156-620	c 76	N77-32919* #	US-PATENT-CLASS-165-164	c 34	N77-10463* #	US-PATENT-CLASS-176-33	c 73	N78-28913* #
US-PATENT-CLASS-156-633	c 44	N78-25529* #	US-PATENT-CLASS-165-166	c 54	N77-32722* #	US-PATENT-CLASS-176-39	c 73	N78-19920* #
US-PATENT-CLASS-156-645	c 27	N77-32308* #	US-PATENT-CLASS-165-169	c 34	N79-13288* #	US-PATENT-CLASS-176-39	c 73	N78-28913* #
US-PATENT-CLASS-156-647	c 33	N81-26360* #	US-PATENT-CLASS-165-169	c 34	N79-13289* #	US-PATENT-CLASS-176-3	c 75	N75-13625* #
US-PATENT-CLASS-156-648	c 33	N81-26360* #	US-PATENT-CLASS-165-16	c 31	N80-32583* #	US-PATENT-CLASS-176-45	c 22	N71-28759* #
US-PATENT-CLASS-156-649	c 33	N81-26360* #	US-PATENT-CLASS-165-170	c 34	N77-10463* #	US-PATENT-CLASS-176-86G	c 22	N72-20597* #
US-PATENT-CLASS-156-663	c 27	N77-32308* #	US-PATENT-CLASS-165-174	c 33	N72-20915* #	US-PATENT-CLASS-177-1	c 35	N77-19385* #
US-PATENT-CLASS-156-66	c 15	N72-11392* #	US-PATENT-CLASS-165-185	c 28	N73-32606* #	US-PATENT-CLASS-177-200	c 35	N74-26945* #
US-PATENT-CLASS-156-71	c 33	N82-26571* #	US-PATENT-CLASS-165-1	c 09	N70-41717* #	US-PATENT-CLASS-177-208	c 35	N77-19385* #
US-PATENT-CLASS-156-74	c 24	N81-29163* #	US-PATENT-CLASS-165-1	c 34	N75-12222* #	US-PATENT-CLASS-177-210	c 14	N71-10773* #
US-PATENT-CLASS-156-7	c 74	N75-12732* #	US-PATENT-CLASS-165-20	c 03	N72-28025* #	US-PATENT-CLASS-177-211	c 35	N74-26945* #
US-PATENT-CLASS-156-84	c 15	N72-16330* #	US-PATENT-CLASS-165-2	c 33	N71-24876* #	US-PATENT-CLASS-177-246	c 35	N74-26945* #
US-PATENT-CLASS-156-84	c 37	N82-24491* #	US-PATENT-CLASS-165-2	c 35	N74-15093* #	US-PATENT-CLASS-178-DIG 12	c 07	N72-12081* #
US-PATENT-CLASS-156-85	c 37	N82-24491* #	US-PATENT-CLASS-165-2	c 44	N77-32581* #	US-PATENT-CLASS-178-DIG 12	c 32	N75-21485* #
US-PATENT-CLASS-156-86	c 15	N72-16330* #	US-PATENT-CLASS-165-2	c 44	N78-17460* #	US-PATENT-CLASS-178-DIG 1	c 36	N74-20009* #
US-PATENT-CLASS-156-86	c 37	N82-24491* #	US-PATENT-CLASS-165-2	c 51	N79-10694* #	US-PATENT-CLASS-178-DIG 1	c 33	N73-30431* #
US-PATENT-CLASS-156-89	c 37	N75-15992* #	US-PATENT-CLASS-165-30	c 51	N79-10694* #	US-PATENT-CLASS-178-DIG 1	c 45	N76-17656* #
US-PATENT-CLASS-156-89	c 24	N79-25143* #	US-PATENT-CLASS-165-30	c 31	N79-17029* #	US-PATENT-CLASS-178-DIG 20	c 18	N76-14186* #
US-PATENT-CLASS-156-94	c 32	N74-27612* #	US-PATENT-CLASS-165-32	c 31	N73-30829* #	US-PATENT-CLASS-178-DIG 20	c 23	N72-27728* #
US-PATENT-CLASS-156-94	c 24	N74-30001* #	US-PATENT-CLASS-165-32	c 33	N73-32818* #	US-PATENT-CLASS-178-DIG 20	c 35	N75-19613* #
US-PATENT-CLASS-156-99	c 37	N75-15992* #	US-PATENT-CLASS-165-32	c 34	N78-17337* #	US-PATENT-CLASS-178-DIG 21	c 16	N72-13437* #
US-PATENT-CLASS-161-115	c 18	N70-41583* #	US-PATENT-CLASS-165-32	c 34	N79-31523* #	US-PATENT-CLASS-178-DIG 23	c 07	N73-30115* #
US-PATENT-CLASS-161-116	c 37	N74-23064* #	US-PATENT-CLASS-165-32	c 44	N80-20810* #	US-PATENT-CLASS-178-DIG 25	c 74	N75-25706* #
US-PATENT-CLASS-161-127	c 18	N72-25540* #	US-PATENT-CLASS-165-32	c 33	N82-24419* #	US-PATENT-CLASS-178-DIG 28	c 08	N72-21164* #
US-PATENT-CLASS-161-127	c 18	N72-25541* #	US-PATENT-CLASS-165-3	c 03	N72-28025* #	US-PATENT-CLASS-178-DIG 29	c 35	N75-25123* #
US-PATENT-CLASS-161-161	c 33	N71-25351* #	US-PATENT-CLASS-165-44	c 15	N71-26611* #	US-PATENT-CLASS-178-DIG 32	c 71	N74-21014* #
US-PATENT-CLASS-161-182	c 15	N69-39735* #	US-PATENT-CLASS-165-46	c 05	N71-19439* #	US-PATENT-CLASS-178-DIG 35	c 09	N76-24280* #
US-PATENT-CLASS-161-182	c 37	N74-18126* #	US-PATENT-CLASS-165-46	c 05	N71-24147* #	US-PATENT-CLASS-178-DIG 36	c 08	N72-22164* #
US-PATENT-CLASS-161-189	c 23	N71-15978* #	US-PATENT-CLASS-165-46	c 05	N73-20137* #	US-PATENT-CLASS-178-DIG 6	c 10	N73-13235* #
US-PATENT-CLASS-161-192	c 37	N74-18126* #	US-PATENT-CLASS-165-46	c 05	N73-26071* #	US-PATENT-CLASS-178-DIG 8	c 14	N72-25412* #
US-PATENT-CLASS-161-196	c 37	N74-21063* #	US-PATENT-CLASS-165-46	c 54	N82-29002* #	US-PATENT-CLASS-178-DIG 8	c 45	N76-17656* #
US-PATENT-CLASS-161-214	c 06	N73-27980* #	US-PATENT-CLASS-165-47	c 33	N71-29052* #	US-PATENT-CLASS-178-15	c 33	N75-19517* #
US-PATENT-CLASS-161-227	c 06	N73-27980* #	US-PATENT-CLASS-165-47	c 31	N73-30829* #	US-PATENT-CLASS-178-18	c 10	N73-32143* #
US-PATENT-CLASS-161-42	c 37	N74-18126* #	US-PATENT-CLASS-165-47	c 34	N75-12222* #	US-PATENT-CLASS-178-22 16	c 32	N82-31583* #
US-PATENT-CLASS-161-43	c 37	N74-18126* #	US-PATENT-CLASS-165-86	c 15	N71-26611* #	US-PATENT-CLASS-178-5.2R	c 09	N71-28618* #
US-PATENT-CLASS-161-67	c 33	N72-17947* #	US-PATENT-CLASS-165-86	c 33	N71-29046* #	US-PATENT-CLASS-178-5.2R	c 07	N72-17109* #
US-PATENT-CLASS-161-68	c 18	N71-21651* #	US-PATENT-CLASS-165-96	c 33	N70-36847*			



US-PATENT-CLASS-178-50	c 08	N72-18184* #	US-PATENT-CLASS-179-100 2	c 08	N71-27210*	US-PATENT-CLASS-188-1C	c 15	N72-17450* #
US-PATENT-CLASS-178-50	c 08	N72-25208* #	US-PATENT-CLASS-179-100 2	c 08	N71-27255*	US-PATENT-CLASS-188-1C	c 15	N72-20443* #
US-PATENT-CLASS-178-52	c 08	N72-22162* #	US-PATENT-CLASS-179-100-2CA	c 09	N72-11224*	US-PATENT-CLASS-188-1C	c 15	N73-30460* #
US-PATENT-CLASS-178-54CF	c 09	N71-28618*	US-PATENT-CLASS-179-100-2MD	c 09	N72-11224*	US-PATENT-CLASS-188-1C	c 11	N73-32152* #
US-PATENT-CLASS-178-54PE	c 09	N71-28618*	US-PATENT-CLASS-179-107R	c 33	N78-10375* #	US-PATENT-CLASS-188-1C	c 37	N79-10420* #
US-PATENT-CLASS-178-58A	c 32	N75-21486* #	US-PATENT-CLASS-179-15 55R	c 08	N72-11171*	US-PATENT-CLASS-188-103	c 15	N71-27146* #
US-PATENT-CLASS-178-58R	c 32	N80-18252* #	US-PATENT-CLASS-179-15 55R	c 08	N72-33172* #	US-PATENT-CLASS-188-129	c 15	N72-17450* #
US-PATENT-CLASS-178-6 5	c 23	N72-27728* #	US-PATENT-CLASS-179-15 55R	c 07	N73-16121* #	US-PATENT-CLASS-188-134	c 37	N81-15364* #
US-PATENT-CLASS-178-6 6DD	c 07	N73-30115* #	US-PATENT-CLASS-179-15A	c 07	N73-16121* #	US-PATENT-CLASS-188-151A	c 44	N79-14527* #
US-PATENT-CLASS-178-6 6DD	c 35	N74-11283* #	US-PATENT-CLASS-179-15AT	c 32	N74-30524* #	US-PATENT-CLASS-188-163	c 37	N74-26976* #
US-PATENT-CLASS-178-6 6	c 07	N71-11300* #	US-PATENT-CLASS-179-15A	c 08	N72-22162* #	US-PATENT-CLASS-188-171	c 37	N74-26976* #
US-PATENT-CLASS-178-6 6	c 07	N71-26102* #	US-PATENT-CLASS-179-15A	c 07	N73-26118* #	US-PATENT-CLASS-188-180	c 37	N81-15364* #
US-PATENT-CLASS-178-6 7R	c 35	N74-15831* #	US-PATENT-CLASS-179-15BA	c 60	N77-12721* #	US-PATENT-CLASS-188-184	c 37	N81-15364* #
US-PATENT-CLASS-178-6 7	c 07	N72-17109* #	US-PATENT-CLASS-179-15BA	c 32	N80-18252* #	US-PATENT-CLASS-188-1	c 15	N70-34861* #
US-PATENT-CLASS-178-6 8	c 08	N72-22164* #	US-PATENT-CLASS-179-15BC	c 08	N72-25208* #	US-PATENT-CLASS-188-1	c 15	N70-38601* #
US-PATENT-CLASS-178-6 8	c 14	N72-25412* #	US-PATENT-CLASS-179-15BC	c 07	N73-16121* #	US-PATENT-CLASS-188-1	c 15	N70-40354* #
US-PATENT-CLASS-178-6 8	c 07	N73-30115* #	US-PATENT-CLASS-179-15BC	c 32	N74-30523* #	US-PATENT-CLASS-188-1	c 14	N71-17626* #
US-PATENT-CLASS-178-6 8	c 33	N75-30431* #	US-PATENT-CLASS-179-15BC	c 33	N75-26243* #	US-PATENT-CLASS-188-1	c 15	N71-22877* #
US-PATENT-CLASS-178-6 8	c 45	N76-17656* #	US-PATENT-CLASS-179-15BL	c 08	N72-22162* #	US-PATENT-CLASS-188-1	c 14	N71-23092* #
US-PATENT-CLASS-178-66R	c 32	N75-24981* #	US-PATENT-CLASS-179-15BM	c 07	N73-26118* #	US-PATENT-CLASS-188-1	c 15	N71-26243* #
US-PATENT-CLASS-178-66	c 09	N71-25866* #	US-PATENT-CLASS-179-15BS	c 10	N71-33407* #	US-PATENT-CLASS-188-1	c 15	N71-27146* #
US-PATENT-CLASS-178-66	c 08	N72-18184* #	US-PATENT-CLASS-179-15BS	c 07	N72-20140* #	US-PATENT-CLASS-188-1	c 15	N71-27169* #
US-PATENT-CLASS-178-67	c 08	N70-41961* #	US-PATENT-CLASS-179-15BS	c 07	N73-30115* #	US-PATENT-CLASS-188-266	c 15	N73-25513* #
US-PATENT-CLASS-178-67	c 32	N74-26654* #	US-PATENT-CLASS-179-15BS	c 32	N75-26195* #	US-PATENT-CLASS-188-268	c 15	N72-20443* #
US-PATENT-CLASS-178-69 1	c 32	N78-15323* #	US-PATENT-CLASS-179-15BS	c 60	N77-19760* #	US-PATENT-CLASS-188-269	c 44	N79-14527* #
US-PATENT-CLASS-178-69 4R	c 32	N74-10132* #	US-PATENT-CLASS-179-15BV	c 07	N72-25172* #	US-PATENT-CLASS-188-291	c 54	N77-21844* #
US-PATENT-CLASS-178-69 5R	c 07	N72-20140* #	US-PATENT-CLASS-179-15BY	c 32	N74-30524* #	US-PATENT-CLASS-188-371	c 37	N82-18601* #
US-PATENT-CLASS-178-69 5R	c 32	N75-26195* #	US-PATENT-CLASS-179-15FD	c 08	N72-25208* #	US-PATENT-CLASS-188-65 1	c 15	N73-25512* #
US-PATENT-CLASS-178-69 5R	c 33	N76-14371* #	US-PATENT-CLASS-179-15FS	c 07	N73-28012* #	US-PATENT-CLASS-188-65 5	c 15	N71-27067* #
US-PATENT-CLASS-178-69 5R	c 60	N77-19760* #	US-PATENT-CLASS-179-15	c 07	N69-39978* #	US-PATENT-CLASS-188-67	c 12	N71-16894* #
US-PATENT-CLASS-178-69 5	c 07	N71-11281* #	US-PATENT-CLASS-179-15	c 07	N71-20814* #	US-PATENT-CLASS-188-88	c 15	N71-26611* #
US-PATENT-CLASS-178-69 5	c 10	N71-19468* #	US-PATENT-CLASS-179-15	c 07	N71-24621* #	US-PATENT-CLASS-189-36	c 15	N70-36947* #
US-PATENT-CLASS-178-69 5	c 10	N71-25865* #	US-PATENT-CLASS-179-15	c 07	N71-24622* #	US-PATENT-CLASS-19-205	c 37	N76-18456* #
US-PATENT-CLASS-178-69 5	c 10	N71-33407* #	US-PATENT-CLASS-179-15	c 08	N72-18184* #	US-PATENT-CLASS-192-43 1	c 15	N71-17805* #
US-PATENT-CLASS-178-69 5	c 07	N72-25173* #	US-PATENT-CLASS-179-175 1A	c 14	N73-27379* #	US-PATENT-CLASS-195-1 8	c 51	N77-25769* #
US-PATENT-CLASS-178-69 5	c 07	N73-13149* #	US-PATENT-CLASS-179-175 1A	c 33	N78-10375* #	US-PATENT-CLASS-195-1 8	c 51	N79-10694* #
US-PATENT-CLASS-178-69 5	c 09	N73-28084* #	US-PATENT-CLASS-179-18GF	c 33	N82-29538* #	US-PATENT-CLASS-195-103 5K	c 51	N77-22794* #
US-PATENT-CLASS-178-69 5	c 17	N76-22245* #	US-PATENT-CLASS-179-1	c 07	N71-26181* #	US-PATENT-CLASS-195-103 5K	c 52	N79-14750* #
US-PATENT-CLASS-178-69A	c 35	N75-21582* #	US-PATENT-CLASS-179-1	c 31	N71-33160* #	US-PATENT-CLASS-195-103 5L	c 52	N79-14750* #
US-PATENT-CLASS-178-69C	c 32	N76-16249* #	US-PATENT-CLASS-179-27CA	c 32	N79-23310* #	US-PATENT-CLASS-195-103 5R	c 06	N72-25149* #
US-PATENT-CLASS-178-6	c 07	N71-19433* #	US-PATENT-CLASS-179-78	c 33	N81-27397* #	US-PATENT-CLASS-195-103 5R	c 25	N75-12086* #
US-PATENT-CLASS-178-6	c 09	N71-19449* #	US-PATENT-CLASS-179-84VF	c 32	N79-23310* #	US-PATENT-CLASS-195-103 5R	c 35	N75-27330* #
US-PATENT-CLASS-178-6	c 07	N71-23026* #	US-PATENT-CLASS-179-91R	c 74	N78-14889* #	US-PATENT-CLASS-195-103 5R	c 35	N75-33368* #
US-PATENT-CLASS-178-6	c 07	N71-26579* #	US-PATENT-CLASS-18-26	c 06	N71-22975* #	US-PATENT-CLASS-195-103 5R	c 51	N76-29891* #
US-PATENT-CLASS-178-6	c 07	N72-12081* #	US-PATENT-CLASS-18-39	c 27	N70-34783* #	US-PATENT-CLASS-195-103 5R	c 51	N77-22794* #
US-PATENT-CLASS-178-6	c 16	N72-13437* #	US-PATENT-CLASS-18-6	c 15	N71-26721* #	US-PATENT-CLASS-195-103 5R	c 25	N79-22235* #
US-PATENT-CLASS-178-6	c 10	N73-13235* #	US-PATENT-CLASS-180-105E	c 11	N72-20244* #	US-PATENT-CLASS-195-120	c 51	N75-13502* #
US-PATENT-CLASS-178-6	c 36	N74-20009* #	US-PATENT-CLASS-180-118	c 31	N71-15689* #	US-PATENT-CLASS-195-120	c 35	N75-27330* #
US-PATENT-CLASS-178-7 1	c 07	N71-24612* #	US-PATENT-CLASS-180-121	c 31	N71-15689* #	US-PATENT-CLASS-195-127	c 15	N72-21465* #
US-PATENT-CLASS-178-7 1	c 07	N71-27341* #	US-PATENT-CLASS-180-125	c 15	N72-17451* #	US-PATENT-CLASS-195-127	c 11	N72-25284* #
US-PATENT-CLASS-178-7 1	c 09	N72-17156* #	US-PATENT-CLASS-180-127	c 15	N72-17451* #	US-PATENT-CLASS-195-127	c 14	N72-25413* #
US-PATENT-CLASS-178-7 1	c 32	N74-19790* #	US-PATENT-CLASS-180-41	c 11	N73-26238* #	US-PATENT-CLASS-195-127	c 15	N73-20514* #
US-PATENT-CLASS-178-7 1	c 36	N75-19652* #	US-PATENT-CLASS-180-6 5	c 11	N73-26238* #	US-PATENT-CLASS-195-127	c 05	N73-32011* #
US-PATENT-CLASS-178-7 2R	c 08	N72-22164* #	US-PATENT-CLASS-180-7R	c 11	N73-26238* #	US-PATENT-CLASS-195-127	c 35	N75-12272* #
US-PATENT-CLASS-178-7 2	c 14	N70-41807* #	US-PATENT-CLASS-180-79 3	c 37	N74-18125* #	US-PATENT-CLASS-195-127	c 51	N75-13502* #
US-PATENT-CLASS-178-7 2	c 71	N74-21014* #	US-PATENT-CLASS-180-8A	c 11	N73-26238* #	US-PATENT-CLASS-195-127	c 35	N75-27330* #
US-PATENT-CLASS-178-7 2	c 35	N75-25123* #	US-PATENT-CLASS-180-9 2R	c 11	N73-26238* #	US-PATENT-CLASS-195-127	c 25	N79-22235* #
US-PATENT-CLASS-178-7 3	c 07	N71-27341* #	US-PATENT-CLASS-180-9 5	c 11	N73-26238* #	US-PATENT-CLASS-195-127	c 25	N79-24073* #
US-PATENT-CLASS-178-7 3	c 07	N72-12081* #	US-PATENT-CLASS-181 5R	c 71	N74-31148* #	US-PATENT-CLASS-195-141	c 35	N75-27330* #
US-PATENT-CLASS-178-7 5E	c 10	N72-31273* #	US-PATENT-CLASS-181-5	c 11	N71-28779* #	US-PATENT-CLASS-195-28N	c 06	N72-25149* #
US-PATENT-CLASS-178-7 6	c 36	N74-20009* #	US-PATENT-CLASS-181-102	c 39	N80-10507* #	US-PATENT-CLASS-195-66R	c 06	N73-27086* #
US-PATENT-CLASS-178-7 7	c 09	N71-12539* #	US-PATENT-CLASS-181-102	c 31	N80-32584* #	US-PATENT-CLASS-195-66R	c 04	N69-27487* #
US-PATENT-CLASS-178-7 7	c 32	N74-20813* #	US-PATENT-CLASS-181-105	c 39	N80-10507* #	US-PATENT-CLASS-195-99	c 06	N71-17705* #
US-PATENT-CLASS-178-7 89	c 09	N76-24280* #	US-PATENT-CLASS-181-106	c 46	N79-22679* #	US-PATENT-CLASS-197-188	c 37	N77-19457* #
US-PATENT-CLASS-178-7 92	c 14	N72-25414* #	US-PATENT-CLASS-181-115	c 46	N79-23555* #	US-PATENT-CLASS-197-190	c 37	N77-19457* #
US-PATENT-CLASS-178-79	c 32	N75-21486* #	US-PATENT-CLASS-181-117	c 46	N79-22679* #	US-PATENT-CLASS-198-847	c 37	N80-32717* #
US-PATENT-CLASS-178-88	c 07	N71-12392* #	US-PATENT-CLASS-181-120	c 46	N79-23555* #	US-PATENT-CLASS-198-848	c 37	N80-32717* #
US-PATENT-CLASS-178-88	c 33	N74-12887* #	US-PATENT-CLASS-181-148	c 71	N79-23753* #	US-PATENT-CLASS-1	c 14	N71-27005* #
US-PATENT-CLASS-178-88	c 32	N74-20809* #	US-PATENT-CLASS-181-190	c 71	N79-14871* #	US-PATENT-CLASS-2-115	c 05	N72-25119* #
US-PATENT-CLASS-178-88	c 33	N74-27705* #	US-PATENT-CLASS-181-213	c 71	N79-14871* #	US-PATENT-CLASS-2-115	c 05	N71-23096* #
US-PATENT-CLASS-178-88	c 33	N76-14371* #	US-PATENT-CLASS-181-214	c 07	N81-14999* #	US-PATENT-CLASS-2-161	c 54	N78-17677* #
US-PATENT-CLASS-178-88	c 32	N76-16249* #	US-PATENT-CLASS-181-214	c 71	N82-16800* #	US-PATENT-CLASS-2-2 1A	c 05	N72-22092* #
US-PATENT-CLASS-178-88	c 32	N77-10392* #	US-PATENT-CLASS-181-222	c 71	N79-14871* #	US-PATENT-CLASS-2-2 1A	c 05	N73-25125* #
US-PATENT-CLASS-178-88	c 32	N77-24331* #	US-PATENT-CLASS-181-293	c 71	N79-14871* #	US-PATENT-CLASS-2-2 1A	c 05	N73-32012* #
US-PATENT-CLASS-179-1DM	c 71	N79-23753* #	US-PATENT-CLASS-181-33C	c 07	N74-32418* #	US-PATENT-CLASS-2-2 1A	c 54	N74-32546* #
US-PATENT-CLASS-179-1MF	c 71	N79-23753* #	US-PATENT-CLASS-181-33F	c 07	N74-32418* #	US-PATENT-CLASS-2-2 1A	c 54	N77-32721* #
US-PATENT-CLASS-179-1MN	c 32	N79-23310* #	US-PATENT-CLASS-181-33HB	c 07	N74-27490* #	US-PATENT-CLASS-2-2 1A	c 54	N78-17675* #
US-PATENT-CLASS-179-1P	c 10	N73-12244* #	US-PATENT-CLASS-181-33HC	c 07	N74-33218* #	US-PATENT-CLASS-2-2 1A	c 54	N78-31735* #
US-PATENT-CLASS-179-1R	c 07	N71-33108* #	US-PATENT-CLASS-181-33HC	c 07	N76-18117* #	US-PATENT-CLASS-2-2 1A	c 54	N78-31736* #
US-PATENT-CLASS-179-1SA	c 10	N73-25240* #	US-PATENT-CLASS-181-33H	c 07	N74-32418* #	US-PATENT-CLASS-2-2 1A	c 54	N79-24651* #
US-PATENT-CLASS-179-1SA	c 32	N76-31372* #	US-PATENT-CLASS-181-33L	c 07	N74-32418* #	US-PATENT-CLASS-2-2 1	c 05	N71-11194* #
US-PATENT-CLASS-179-1SA	c 32	N77-30309* #	US-PATENT-CLASS-181-42	c 07	N74-32418* #	US-PATENT-CLASS-2-2 1	c 05	N71-11195* #
US-PATENT-CLASS-179-1SP	c 32	N77-30309* #	US-PATENT-CLASS-181-43	c 07	N74-15453* #	US-PATENT-CLASS-2-2 1	c 05	N71-12335* #
US-PATENT-CLASS-179-1VC	c 07	N71-33108* #	US-PATENT-CLASS-181-52	c 28	N70-41582* #	US-PATENT-CLASS-2-2 1	c 05	N71-12344* #
US-PATENT-CLASS-179-100 2A	c 21	N73-13644* #	US-PATENT-CLASS-182-10	c 15	N71-27067* #	US-PATENT-CLASS-2-2 1	c 05	N71-23161* #
US-PATENT-CLASS-179-100 2A	c 32	N74-27612* #	US-PATENT-CLASS-182-178	c 39	N76-31562* #	US-PATENT-CLASS-2-2 1	c 05	N71-24623* #
US-PATENT-CLASS-179-100 2B	c 32	N74-27612* #	US-PATENT-CLASS-182-191	c 05	N71-11199* #	US-PATENT-CLASS-2-2 1	c 05	N71-24730* #
US-PATENT-CLASS-179-100 2CH	c 36	N74-13205* #	US-PATENT-CLASS-182-5	c 15	N72-25512* #	US-PATENT-CLASS-2-2 1	c 05	N72-20096* #
US-PATENT-CLASS-179-100 2CH	c 35	N78-29421* #	US-PATENT-CLASS-182-62 5	c 31	N81-27324* #	US-PATENT-CLASS-2-2 1	c 05	N72-20098* #
US-PATENT-CLASS-179-100 2CH	c 35	N79-16246* #	US-PATENT-CLASS-184-1	c 15	N71-23046* #	US-PATENT-CLASS-2-2 1	c 05	N72-25119* #
US-PATENT-CLASS-179-100 2C	c 35	N77-21392* #	US-PATENT-CLASS-185-38	c 37	N78-16369* #	US-PATENT-CLASS-2-2 1	c 05	N73-26071* #
US-PATENT-CLASS-179-100 2K	c 07	N72-21119* #	US-PATENT-CLASS-187-1	c 15	N72-25453* #	US-PATENT-CLASS-2-2 1	c 05	N78-17377* #
US-PATENT-CLASS-179-100 2MD	c 35	N74-11283* #	US-PATENT-CLASS-187-20	c 15	N72-25453* #	US-PATENT-CLASS-2-2 1	c 34	N78-17678* #
US-PATENT-CLASS-179-100 2T	c 35	N74-11283* #	US-PATENT-					



US-PATENT-CLASS-2-6	c 05	N71-26333*	US-PATENT-CLASS-204-263	c 14	N71-28933*	US-PATENT-CLASS-210-40	c 27	N77-31308*#
US-PATENT-CLASS-2-6	c 54	N78-17680* #	US-PATENT-CLASS-204-263	c 25	N82-12166* #	US-PATENT-CLASS-210-40	c 85	N79-17747*#
US-PATENT-CLASS-2-81	c 18	N71-26285*	US-PATENT-CLASS-204-264	c 25	N82-12166* #	US-PATENT-CLASS-210-40	c 45	N82-11634*#
US-PATENT-CLASS-2-81	c 05	N73-32012* #	US-PATENT-CLASS-204-266	c 28	N81-24280* #	US-PATENT-CLASS-210-411	c 34	N75-33342*#
US-PATENT-CLASS-2-82	c 54	N74-32546* #	US-PATENT-CLASS-204-266	c 25	N82-12166* #	US-PATENT-CLASS-210-425	c 34	N75-33342*#
US-PATENT-CLASS-200-114	c 33	N79-33393* #	US-PATENT-CLASS-204-267	c 33	N75-27252* #	US-PATENT-CLASS-210-429	c 37	N76-14463* #
US-PATENT-CLASS-200-129	c 33	N75-27249* #	US-PATENT-CLASS-204-275	c 25	N82-12166* #	US-PATENT-CLASS-210-433M	c 51	N79-10693*#
US-PATENT-CLASS-200-152	c 09	N71-19610*	US-PATENT-CLASS-204-276	c 25	N82-12166* #	US-PATENT-CLASS-210-445	c 15	N72-11389*#
US-PATENT-CLASS-200-153S	c 33	N80-18285* #	US-PATENT-CLASS-204-278	c 25	N82-12166* #	US-PATENT-CLASS-210-45	c 85	N79-17747*#
US-PATENT-CLASS-200-19	c 09	N70-39915* #	US-PATENT-CLASS-204-279	c 33	N75-27252* #	US-PATENT-CLASS-210-500M	c 27	N80-23452*#
US-PATENT-CLASS-200-304	c 33	N80-18285* #	US-PATENT-CLASS-204-290F	c 28	N81-24280* #	US-PATENT-CLASS-210-500M	c 25	N81-17187*#
US-PATENT-CLASS-200-39	c 03	N70-38713* #	US-PATENT-CLASS-204-290F	c 44	N82-29710* #	US-PATENT-CLASS-210-500	c 25	N75-12087*#
US-PATENT-CLASS-200-46	c 74	N79-12890* #	US-PATENT-CLASS-204-290F	c 33	N75-27252* #	US-PATENT-CLASS-210-50	c 45	N79-12584*#
US-PATENT-CLASS-200-61 42	c 09	N71-12518* #	US-PATENT-CLASS-204-290R	c 28	N81-24280* #	US-PATENT-CLASS-210-512	c 34	N75-33342*#
US-PATENT-CLASS-200-61 45	c 14	N70-41812* #	US-PATENT-CLASS-204-290R	c 44	N82-29710* #	US-PATENT-CLASS-210-54	c 85	N79-17747*#
US-PATENT-CLASS-200-61	c 74	N79-12890* #	US-PATENT-CLASS-204-291	c 28	N81-24280* #	US-PATENT-CLASS-210-57	c 45	N80-14579*#
US-PATENT-CLASS-200-64	c 15	N72-17455* #	US-PATENT-CLASS-204-292	c 25	N78-10225* #	US-PATENT-CLASS-210-60	c 45	N79-12584*#
US-PATENT-CLASS-200-6	c 10	N71-15909*	US-PATENT-CLASS-204-298	c 15	N70-34967* #	US-PATENT-CLASS-210-63R	c 25	N78-10225*#
US-PATENT-CLASS-200-6	c 09	N71-16089*	US-PATENT-CLASS-204-298	c 09	N71-26701*	US-PATENT-CLASS-210-63R	c 45	N79-12584*#
US-PATENT-CLASS-200-81 9M	c 09	N72-20199* #	US-PATENT-CLASS-204-298	c 15	N72-32487* #	US-PATENT-CLASS-210-63Z	c 45	N80-14579*#
US-PATENT-CLASS-200-81R	c 09	N72-22204* #	US-PATENT-CLASS-204-298	c 37	N75-19684* #	US-PATENT-CLASS-210-66	c 85	N79-17747*#
US-PATENT-CLASS-200-82C	c 10	N72-22204* #	US-PATENT-CLASS-204-298R	c 25	N78-14104* #	US-PATENT-CLASS-210-67	c 85	N79-17747*#
US-PATENT-CLASS-200-82	c 09	N71-23663*	US-PATENT-CLASS-204-299R	c 25	N79-14169* #	US-PATENT-CLASS-210-70	c 85	N79-17747*#
US-PATENT-CLASS-200-83N	c 35	N75-15931* #	US-PATENT-CLASS-204-299R	c 37	N80-14397* #	US-PATENT-CLASS-210-71	c 25	N78-10225*#
US-PATENT-CLASS-200-83	c 33	N79-33392* #	US-PATENT-CLASS-204-299R	c 51	N80-16715* #	US-PATENT-CLASS-210-73R	c 85	N79-17747*#
US-PATENT-CLASS-201-10	c 27	N81-17261* #	US-PATENT-CLASS-204-299	c 34	N74-27744* #	US-PATENT-CLASS-210-82	c 34	N75-33342*#
US-PATENT-CLASS-201-17	c 44	N78-31527* #	US-PATENT-CLASS-204-299	c 25	N79-10163* #	US-PATENT-CLASS-210-96M	c 54	N78-14784*#
US-PATENT-CLASS-201-17	c 25	N81-33246* #	US-PATENT-CLASS-204-301	c 54	N78-14784* #	US-PATENT-CLASS-210-96M	c 51	N79-10693*#
US-PATENT-CLASS-201-17	c 25	N82-29371* #	US-PATENT-CLASS-204-305	c 03	N71-24718*	US-PATENT-CLASS-212-11	c 32	N71-17609*#
US-PATENT-CLASS-201-25	c 27	N81-17261* #	US-PATENT-CLASS-204-30	c 09	N71-28691*	US-PATENT-CLASS-212-134	c 15	N72-11388*#
US-PATENT-CLASS-201-8	c 27	N81-17261* #	US-PATENT-CLASS-204-32A	c 33	N77-26385* #	US-PATENT-CLASS-212-267	c 31	N81-27324*#
US-PATENT-CLASS-202-118	c 31	N81-15154* #	US-PATENT-CLASS-204-32R	c 44	N76-14595* #	US-PATENT-CLASS-213-81	c 37	N77-23483*#
US-PATENT-CLASS-202-182	c 05	N71-11207* #	US-PATENT-CLASS-204-324	c 33	N73-16918* #	US-PATENT-CLASS-214-1CM	c 37	N76-15460*#
US-PATENT-CLASS-202-234	c 15	N71-23086*	US-PATENT-CLASS-204-325	c 33	N73-16918* #	US-PATENT-CLASS-214-1BC	c 54	N77-32721*#
US-PATENT-CLASS-203-12	c 25	N82-28368* #	US-PATENT-CLASS-204-328	c 33	N73-16918* #	US-PATENT-CLASS-214-1B	c 54	N75-27758*#
US-PATENT-CLASS-204-DIG 11	c 25	N77-32255* #	US-PATENT-CLASS-204-32	c 44	N79-11469* #	US-PATENT-CLASS-214-1CM	c 15	N72-28495*#
US-PATENT-CLASS-204-1T	c 25	N79-22235* #	US-PATENT-CLASS-204-33	c 17	N71-25903* #	US-PATENT-CLASS-214-1CM	c 54	N75-12616*#
US-PATENT-CLASS-204-1T	c 51	N81-28698* #	US-PATENT-CLASS-204-33	c 44	N76-14595* #	US-PATENT-CLASS-214-1CM	c 18	N75-27041*#
US-PATENT-CLASS-204-1T	c 25	N82-12166* #	US-PATENT-CLASS-204-33	c 44	N79-11469* #	US-PATENT-CLASS-214-1CM	c 54	N75-27758*#
US-PATENT-CLASS-204-129	c 28	N81-24280* #	US-PATENT-CLASS-204-37R	c 44	N79-11469* #	US-PATENT-CLASS-214-1CM	c 37	N77-23483*#
US-PATENT-CLASS-204-130	c 15	N72-21466* #	US-PATENT-CLASS-204-37	c 33	N71-29151*	US-PATENT-CLASS-214-1CM	c 54	N77-32721*#
US-PATENT-CLASS-204-157 1H	c 25	N74-30502* #	US-PATENT-CLASS-204-38A	c 44	N76-14595* #	US-PATENT-CLASS-214-1CM	c 54	N78-17676*#
US-PATENT-CLASS-204-157 1H	c 37	N76-18458* #	US-PATENT-CLASS-204-38B	c 44	N79-11469* #	US-PATENT-CLASS-214-1R	c 37	N76-15457*#
US-PATENT-CLASS-204-157 1R	c 25	N77-32255* #	US-PATENT-CLASS-204-38B	c 27	N82-33521* #	US-PATENT-CLASS-214-16 1CB	c 37	N77-22480*#
US-PATENT-CLASS-204-157 1R	c 44	N77-32580* #	US-PATENT-CLASS-204-38	c 17	N71-24830*	US-PATENT-CLASS-214-1	c 32	N70-41367*#
US-PATENT-CLASS-204-157 1R	c 44	N79-11470* #	US-PATENT-CLASS-204-40	c 44	N76-14595* #	US-PATENT-CLASS-214-90R	c 03	N72-25021*#
US-PATENT-CLASS-204-157 18AG	c 15	N72-25452* #	US-PATENT-CLASS-204-40	c 24	N77-19171* #	US-PATENT-CLASS-215-247	c 33	N76-19339*#
US-PATENT-CLASS-204-158R	c 25	N77-32255* #	US-PATENT-CLASS-204-42	c 44	N76-14595* #	US-PATENT-CLASS-219-10 41	c 33	N82-26571*#
US-PATENT-CLASS-204-159 11	c 27	N80-32516* #	US-PATENT-CLASS-204-49	c 15	N72-25452* #	US-PATENT-CLASS-219-10 49R	c 33	N81-19389*#
US-PATENT-CLASS-204-159 14	c 27	N80-32516* #	US-PATENT-CLASS-204-49	c 44	N76-14595* #	US-PATENT-CLASS-219-10 49	c 11	N71-15925*#
US-PATENT-CLASS-204-159 15	c 27	N80-26446* #	US-PATENT-CLASS-204-59	c 15	N72-21466* #	US-PATENT-CLASS-219-10 53	c 33	N82-26571*#
US-PATENT-CLASS-204-159 19	c 27	N80-26446* #	US-PATENT-CLASS-204-9	c 20	N74-32919* #	US-PATENT-CLASS-219-10 67	c 33	N81-19389*#
US-PATENT-CLASS-204-162R	c 25	N77-32255* #	US-PATENT-CLASS-204-9	c 24	N77-19171* #	US-PATENT-CLASS-219-101	c 15	N73-14468*#
US-PATENT-CLASS-204-164	c 26	N78-32229* #	US-PATENT-CLASS-2041-195B	c 25	N79-22235* #	US-PATENT-CLASS-219-101	c 37	N74-13000*#
US-PATENT-CLASS-204-168	c 24	N71-25555*	US-PATENT-CLASS-205-343	c 35	N75-30502* #	US-PATENT-CLASS-219-107	c 15	N73-28515*#
US-PATENT-CLASS-204-16	c 24	N77-19171* #	US-PATENT-CLASS-206-439	c 52	N79-14749* #	US-PATENT-CLASS-219-107	c 37	N74-11300*#
US-PATENT-CLASS-204-171	c 27	N80-23452* #	US-PATENT-CLASS-208-10	c 25	N79-11152* #	US-PATENT-CLASS-219-109	c 15	N72-23497*#
US-PATENT-CLASS-204-175	c 26	N78-32229* #	US-PATENT-CLASS-208-241	c 25	N82-23282* #	US-PATENT-CLASS-219-117	c 15	N73-32358*#
US-PATENT-CLASS-204-177	c 25	N75-12087* #	US-PATENT-CLASS-208-8	c 25	N79-11152* #	US-PATENT-CLASS-219-118	c 37	N76-27568*#
US-PATENT-CLASS-204-180G	c 25	N78-14104* #	US-PATENT-CLASS-209-10	c 15	N71-20440*	US-PATENT-CLASS-219-118	c 37	N77-11397*#
US-PATENT-CLASS-204-180G	c 25	N79-14169* #	US-PATENT-CLASS-209-127R	c 35	N76-22509* #	US-PATENT-CLASS-219-119	c 15	N73-14468*#
US-PATENT-CLASS-204-180G	c 37	N80-14397* #	US-PATENT-CLASS-209-250	c 37	N76-18456* #	US-PATENT-CLASS-219-121LN	c 44	N82-26777*#
US-PATENT-CLASS-204-180P	c 54	N78-14784* #	US-PATENT-CLASS-209-300	c 37	N76-18456* #	US-PATENT-CLASS-219-121P	c 15	N72-32487*#
US-PATENT-CLASS-204-180R	c 25	N74-26948* #	US-PATENT-CLASS-209-305	c 37	N76-18456* #	US-PATENT-CLASS-219-121	c 15	N69-21471*#
US-PATENT-CLASS-204-180R	c 34	N74-27744* #	US-PATENT-CLASS-209-349	c 15	N72-22483* #	US-PATENT-CLASS-219-121	c 33	N70-34540*#
US-PATENT-CLASS-204-180R	c 51	N80-16715* #	US-PATENT-CLASS-21-207	c 17	N71-16393*	US-PATENT-CLASS-219-121	c 15	N71-19486*#
US-PATENT-CLASS-204-180S	c 25	N79-10163* #	US-PATENT-CLASS-210-DIG.23	c 52	N79-14749* #	US-PATENT-CLASS-219-121	c 16	N71-20400*#
US-PATENT-CLASS-204-180S	c 25	N79-14169* #	US-PATENT-CLASS-210-DIG.27	c 27	N77-31308* #	US-PATENT-CLASS-219-121	c 15	N71-27135*#
US-PATENT-CLASS-204-192C	c 76	N79-14906* #	US-PATENT-CLASS-210-103	c 05	N72-27102* #	US-PATENT-CLASS-219-124 2-2	c 37	N78-10421*#
US-PATENT-CLASS-204-192C	c 26	N82-29415* #	US-PATENT-CLASS-210-104	c 05	N72-27102* #	US-PATENT-CLASS-219-124 32	c 37	N79-10421*#
US-PATENT-CLASS-204-192C	c 26	N82-30371* #	US-PATENT-CLASS-210-108	c 34	N79-24285* #	US-PATENT-CLASS-219-125 1	c 37	N79-10421*#
US-PATENT-CLASS-204-192EC	c 27	N82-28440* #	US-PATENT-CLASS-210-110	c 05	N72-27102* #	US-PATENT-CLASS-219-125	c 15	N71-23815*#
US-PATENT-CLASS-204-192EC	c 27	N82-33521* #	US-PATENT-CLASS-210-137	c 05	N72-27102* #	US-PATENT-CLASS-219-125	c 37	N75-27376*#
US-PATENT-CLASS-204-192E	c 37	N81-19455* #	US-PATENT-CLASS-210-142	c 34	N79-24285* #	US-PATENT-CLASS-219-130	c 15	N71-23798*#
US-PATENT-CLASS-204-192E	c 27	N82-28440* #	US-PATENT-CLASS-210-186	c 37	N80-10494* #	US-PATENT-CLASS-219-131	c 15	N71-15871*#
US-PATENT-CLASS-204-192E	c 27	N82-33521* #	US-PATENT-CLASS-210-188	c 12	N72-25292* #	US-PATENT-CLASS-219-137	c 15	N70-34814*#
US-PATENT-CLASS-204-192	c 15	N73-12487* #	US-PATENT-CLASS-210-192	c 54	N78-14784* #	US-PATENT-CLASS-219-137	c 37	N75-19683*#
US-PATENT-CLASS-204-192	c 17	N73-24569* #	US-PATENT-CLASS-210-212	c 03	N72-20033* #	US-PATENT-CLASS-219-158	c 15	N72-22491*#
US-PATENT-CLASS-204-192	c 27	N74-1327C* #	US-PATENT-CLASS-210-222	c 35	N78-12390* #	US-PATENT-CLASS-219-160	c 37	N80-23655*#
US-PATENT-CLASS-204-192	c 20	N74-31269* #	US-PATENT-CLASS-210-222	c 52	N80-14687* #	US-PATENT-CLASS-219-161	c 37	N80-23655*#
US-PATENT-CLASS-204-192	c 37	N75-19684* #	US-PATENT-CLASS-210-23F	c 51	N79-10693* #	US-PATENT-CLASS-219-19	c 33	N70-34812*#
US-PATENT-CLASS-204-192	c 44	N77-14580* #	US-PATENT-CLASS-210-23H	c 27	N80-23452* #	US-PATENT-CLASS-219-201	c 52	N80-16725*#
US-PATENT-CLASS-204-195B	c 25	N79-24073* #	US-PATENT-CLASS-210-234	c 34	N75-33342* #	US-PATENT-CLASS-219-203	c 11	N73-12265*#
US-PATENT-CLASS-204-195B	c 51	N80-27067* #	US-PATENT-CLASS-210-24R	c 27	N81-14076* #	US-PATENT-CLASS-219-209	c 35	N81-26431*#
US-PATENT-CLASS-204-195B	c 51	N81-28698* #	US-PATENT-CLASS-210-24	c 27	N77-30236* #	US-PATENT-CLASS-219-210	c 35	N81-26431*#
US-PATENT-CLASS-204-195B	c 35	N82-28604* #	US-PATENT-CLASS-210-24	c 25	N81-19244* #	US-PATENT-CLASS-219-216	c 35	N74-15831*#
US-PATENT-CLASS-204-195R	c 33	N76-19339* #	US-PATENT-CLASS-210-259	c 34	N75-33342* #	US-PATENT-CLASS-219-221	c 15	N72-11392*#
US-PATENT-CLASS-204-195S	c 25	N82-12166* #	US-PATENT-CLASS-210-28	c 85	N79-17747* #	US-PATENT-CLASS-219-229	c 15	N71-27214*#
US-PATENT-CLASS-204-195W	c 35	N78-25391* #	US-PATENT-CLASS-210-304	c 34	N75-33342* #	US-PATENT-CLASS-219-234	c 15	N72-22491*#
US-PATENT-CLASS-204-195	c 14	N71-17575*	US-PATENT-CLASS-210-314	c 28	N70-41447* #	US-PATENT-CLASS-219-234	c 15	N72-23497*#
US-PATENT-CLASS-204-2 1	c 44	N81-29524* #	US-PATENT-CLASS-210-321.1	c 25	N82-21269* #	US-PATENT-CLASS-219-243	c 15	N72-11392*#
US-PATENT-CLASS-204-20	c 18	N71-16210*	US-PATENT-CLASS-210-321B	c 52	N80-14687* #	US-PATENT-CLASS-219-273	c 15	N72-32487*#
US-PATENT-CLASS-204-222	c 31	N74-23065* #	US-PATENT-CLASS-210-333	c 34	N75-33342* #	US-PATENT-CLASS-219-275	c 15	N71-20395*#
US-PATENT-CLASS-204-224	c 37							



US-PATENT-CLASS-219-304	c 37	N77-13418* #	US-PATENT-CLASS-228-15.1	c 18	N79-11108* #	US-PATENT-CLASS-23-277C	c 25	N74-33378* #
US-PATENT-CLASS-219-347	c 15	N69-27871* #	US-PATENT-CLASS-228-157	c 24	N82-24296* #	US-PATENT-CLASS-23-277R	c 44	N77-22607* #
US-PATENT-CLASS-219-347	c 33	N70-34545* #	US-PATENT-CLASS-228-170	c 24	N81-17170* #	US-PATENT-CLASS-23-277	c 26	N70-40015* #
US-PATENT-CLASS-219-348	c 15	N73-27405* #	US-PATENT-CLASS-228-173	c 18	N79-11108* #	US-PATENT-CLASS-23-281	c 28	N72-18766* #
US-PATENT-CLASS-219-34	c 09	N70-33312* #	US-PATENT-CLASS-228-174	c 24	N81-17170* #	US-PATENT-CLASS-23-281	c 25	N74-12813* #
US-PATENT-CLASS-219-364	c 33	N71-16278* #	US-PATENT-CLASS-228-190	c 24	N75-28135* #	US-PATENT-CLASS-23-281	c 44	N76-18642* #
US-PATENT-CLASS-219-378	c 33	N71-25353* #	US-PATENT-CLASS-228-190	c 26	N77-28265* #	US-PATENT-CLASS-23-281	c 44	N76-29700* #
US-PATENT-CLASS-219-388	c 35	N74-15831* #	US-PATENT-CLASS-228-190	c 24	N81-17170* #	US-PATENT-CLASS-23-281	c 44	N77-10636* #
US-PATENT-CLASS-219-410	c 12	N79-26075* #	US-PATENT-CLASS-228-190	c 24	N81-26179* #	US-PATENT-CLASS-23-284	c 44	N77-22607* #
US-PATENT-CLASS-219-411	c 17	N69-25147* #	US-PATENT-CLASS-228-193	c 24	N75-28135* #	US-PATENT-CLASS-23-288F	c 35	N74-15127* #
US-PATENT-CLASS-219-413	c 14	N71-28958* #	US-PATENT-CLASS-228-193	c 24	N75-28135* #	US-PATENT-CLASS-23-288J	c 25	N74-12813* #
US-PATENT-CLASS-219-477	c 33	N74-14935* #	US-PATENT-CLASS-228-193	c 37	N76-18455* #	US-PATENT-CLASS-23-288J	c 25	N74-12813* #
US-PATENT-CLASS-219-497	c 77	N75-20140* #	US-PATENT-CLASS-228-194	c 26	N77-28265* #	US-PATENT-CLASS-23-288R	c 28	N80-10374* #
US-PATENT-CLASS-219-499	c 14	N73-26430* #	US-PATENT-CLASS-228-194	c 37	N75-25185* #	US-PATENT-CLASS-23-288	c 28	N72-17666* #
US-PATENT-CLASS-219-501	c 77	N75-20140* #	US-PATENT-CLASS-228-205	c 37	N79-13364* #	US-PATENT-CLASS-23-292	c 51	N77-27677* #
US-PATENT-CLASS-219-505	c 14	N71-27058* #	US-PATENT-CLASS-228-205	c 37	N81-19455* #	US-PATENT-CLASS-23-293R	c 28	N81-15119* #
US-PATENT-CLASS-219-505	c 77	N75-20140* #	US-PATENT-CLASS-228-206	c 37	N76-18455* #	US-PATENT-CLASS-23-300	c 28	N80-23471* #
US-PATENT-CLASS-219-50	c 14	N73-26430* #	US-PATENT-CLASS-228-212	c 37	N80-23655* #	US-PATENT-CLASS-23-302A	c 28	N80-23471* #
US-PATENT-CLASS-219-510	c 35	N81-26431* #	US-PATENT-CLASS-228-214	c 37	N76-18455* #	US-PATENT-CLASS-23-302R	c 28	N80-23471* #
US-PATENT-CLASS-219-522	c 11	N73-12265* #	US-PATENT-CLASS-228-222	c 37	N80-23655* #	US-PATENT-CLASS-23-302T	c 28	N80-23471* #
US-PATENT-CLASS-219-522	c 52	N80-16725* #	US-PATENT-CLASS-228-232	c 37	N77-28265* #	US-PATENT-CLASS-23-35	c 06	N72-17093* #
US-PATENT-CLASS-219-530	c 33	N71-25353* #	US-PATENT-CLASS-228-238	c 26	N76-18455* #	US-PATENT-CLASS-23-88	c 06	N72-17093* #
US-PATENT-CLASS-219-539	c 33	N74-14935* #	US-PATENT-CLASS-228-263	c 26	N77-29260* #	US-PATENT-CLASS-23-927	c 51	N80-16714* #
US-PATENT-CLASS-219-545	c 33	N82-26571* #	US-PATENT-CLASS-228-44 1R	c 37	N80-23655* #	US-PATENT-CLASS-23-97	c 06	N72-17093* #
US-PATENT-CLASS-219-62	c 15	N73-28515* #	US-PATENT-CLASS-228-50	c 44	N79-24431* #	US-PATENT-CLASS-230-162	c 33	N71-17610* #
US-PATENT-CLASS-219-72	c 15	N71-14932* #	US-PATENT-CLASS-228-50	c 15	N70-39924* #	US-PATENT-CLASS-230-221	c 11	N72-22245* #
US-PATENT-CLASS-219-78	c 37	N74-11300* #	US-PATENT-CLASS-228-50	c 15	N70-40204* #	US-PATENT-CLASS-230-54	c 11	N72-22245* #
US-PATENT-CLASS-219-85CA	c 35	N80-20560* #	US-PATENT-CLASS-228-53	c 15	N71-27214* #	US-PATENT-CLASS-233-DIG 1	c 34	N75-26282* #
US-PATENT-CLASS-219-85CM	c 35	N80-20560* #	US-PATENT-CLASS-228-57	c 15	N72-22491* #	US-PATENT-CLASS-233-11	c 15	N71-16079* #
US-PATENT-CLASS-219-85R	c 35	N80-20560* #	US-PATENT-CLASS-228-6	c 44	N79-24431* #	US-PATENT-CLASS-233-20RP	c 34	N75-26282* #
US-PATENT-CLASS-219-85	c 15	N72-22491* #	US-PATENT-CLASS-228-7	c 15	N71-15607* #	US-PATENT-CLASS-233-225	c 34	N75-26282* #
US-PATENT-CLASS-219-85	c 15	N72-23497* #	US-PATENT-CLASS-228-8	c 15	N71-23050* #	US-PATENT-CLASS-233-46	c 34	N75-26282* #
US-PATENT-CLASS-219-91	c 15	N71-18613* #	US-PATENT-CLASS-228-8	c 37	N79-10421* #	US-PATENT-CLASS-233-6	c 34	N75-26282* #
US-PATENT-CLASS-219-91	c 15	N73-32358* #	US-PATENT-CLASS-228-9	c 15	N71-20393* #	US-PATENT-CLASS-235-150 27	c 04	N74-13420* #
US-PATENT-CLASS-219-92	c 37	N76-27568* #	US-PATENT-CLASS-229-DIG 11	c 32	N73-13921* #	US-PATENT-CLASS-235-10 2	c 08	N73-25206* #
US-PATENT-CLASS-219-92	c 37	N77-11397* #	US-PATENT-CLASS-23-109	c 04	N72-33072* #	US-PATENT-CLASS-235-150 1	c 08	N71-29033* #
US-PATENT-CLASS-22-200	c 15	N71-15966* #	US-PATENT-CLASS-23-201	c 06	N72-17095* #	US-PATENT-CLASS-235-150 1	c 08	N72-31226* #
US-PATENT-CLASS-22-203	c 17	N70-38198* #	US-PATENT-CLASS-23-208	c 15	N69-21922* #	US-PATENT-CLASS-235-150 1	c 32	N77-10392* #
US-PATENT-CLASS-220-14	c 15	N69-39935* #	US-PATENT-CLASS-23-208	c 26	N70-36805* #	US-PATENT-CLASS-235-150 22	c 02	N71-13421* #
US-PATENT-CLASS-220-15	c 31	N71-15664* #	US-PATENT-CLASS-23-209 1	c 15	N72-20446* #	US-PATENT-CLASS-235-150 22	c 04	N74-13420* #
US-PATENT-CLASS-220-15	c 34	N75-12222* #	US-PATENT-CLASS-23-230B	c 25	N75-14844* #	US-PATENT-CLASS-235-150 25	c 21	N71-21688* #
US-PATENT-CLASS-220-1	c 31	N71-17680* #	US-PATENT-CLASS-23-230B	c 23	N77-17161* #	US-PATENT-CLASS-235-150 25	c 35	N77-20399* #
US-PATENT-CLASS-220-2 2	c 24	N79-25143* #	US-PATENT-CLASS-23-230B	c 25	N79-14169* #	US-PATENT-CLASS-235-150 26	c 04	N74-13420* #
US-PATENT-CLASS-220-266	c 37	N79-22474* #	US-PATENT-CLASS-23-230B	c 51	N80-27067* #	US-PATENT-CLASS-235-150 27	c 08	N71-29033* #
US-PATENT-CLASS-220-378	c 37	N82-24490* #	US-PATENT-CLASS-23-230L	c 35	N74-32879* #	US-PATENT-CLASS-235-150 2	c 08	N71-29033* #
US-PATENT-CLASS-220-423	c 37	N80-18393* #	US-PATENT-CLASS-23-230M	c 25	N76-18245* #	US-PATENT-CLASS-235-150 2	c 35	N77-20399* #
US-PATENT-CLASS-220-429	c 44	N80-20808* #	US-PATENT-CLASS-23-230M	c 23	N77-17161* #	US-PATENT-CLASS-235-150 3	c 33	N74-10223* #
US-PATENT-CLASS-220-445	c 37	N80-18393* #	US-PATENT-CLASS-23-230PC	c 25	N78-15210* #	US-PATENT-CLASS-235-150 52	c 08	N72-2165* #
US-PATENT-CLASS-220-46	c 15	N71-27068* #	US-PATENT-CLASS-23-230PC	c 25	N82-12166* #	US-PATENT-CLASS-235-150 53	c 08	N72-2165* #
US-PATENT-CLASS-220-5R	c 15	N72-22486* #	US-PATENT-CLASS-23-230R	c 06	N72-17094* #	US-PATENT-CLASS-235-150 53	c 07	N73-13149* #
US-PATENT-CLASS-220-55	c 15	N69-27502* #	US-PATENT-CLASS-23-230R	c 17	N73-12547* #	US-PATENT-CLASS-235-150 53	c 33	N75-26245* #
US-PATENT-CLASS-220-63	c 11	N70-38182* #	US-PATENT-CLASS-23-230R	c 17	N73-27446* #	US-PATENT-CLASS-235-151 13	c 25	N76-18245* #
US-PATENT-CLASS-220-67	c 15	N71-10577* #	US-PATENT-CLASS-23-230R	c 25	N76-18245* #	US-PATENT-CLASS-235-151 1	c 08	N71-29033* #
US-PATENT-CLASS-220-82R	c 31	N81-19343* #	US-PATENT-CLASS-23-230R	c 45	N76-31714* #	US-PATENT-CLASS-235-151 1	c 08	N73-31226* #
US-PATENT-CLASS-220-89A	c 31	N81-19343* #	US-PATENT-CLASS-23-230R	c 23	N77-17161* #	US-PATENT-CLASS-235-151 27	c 08	N73-25206* #
US-PATENT-CLASS-220-89	c 11	N71-15960* #	US-PATENT-CLASS-23-230	c 08	N71-23527* #	US-PATENT-CLASS-235-151 31	c 10	N73-25240* #
US-PATENT-CLASS-220-89	c 11	N71-17600* #	US-PATENT-CLASS-23-230	c 06	N72-17095* #	US-PATENT-CLASS-235-151 34	c 35	N76-14431* #
US-PATENT-CLASS-220-901	c 37	N80-18393* #	US-PATENT-CLASS-23-231	c 23	N77-17161* #	US-PATENT-CLASS-235-151 3	c 52	N74-22771* #
US-PATENT-CLASS-220-9	c 23	N71-22681* #	US-PATENT-CLASS-23-232C	c 06	N72-17094* #	US-PATENT-CLASS-235-151 3	c 38	N78-17395* #
US-PATENT-CLASS-220-9	c 18	N71-23658* #	US-PATENT-CLASS-23-232C	c 25	N76-18245* #	US-PATENT-CLASS-235-151 3	c 38	N78-17396* #
US-PATENT-CLASS-220-9	c 15	N71-23816* #	US-PATENT-CLASS-23-232C	c 23	N77-17161* #	US-PATENT-CLASS-235-151	c 37	N74-21061* #
US-PATENT-CLASS-220-9	c 33	N71-25351* #	US-PATENT-CLASS-23-232E	c 06	N73-16106* #	US-PATENT-CLASS-235-152E	c 08	N73-30581* #
US-PATENT-CLASS-221-265	c 51	N74-15778* #	US-PATENT-CLASS-23-232E	c 45	N76-31714* #	US-PATENT-CLASS-235-152	c 07	N71-24741* #
US-PATENT-CLASS-222-131	c 31	N79-21225* #	US-PATENT-CLASS-23-232E	c 25	N78-15210* #	US-PATENT-CLASS-235-152	c 08	N72-20176* #
US-PATENT-CLASS-222-135	c 15	N72-21465* #	US-PATENT-CLASS-23-232E	c 25	N82-12166* #	US-PATENT-CLASS-235-152	c 08	N72-2167* #
US-PATENT-CLASS-222-137	c 14	N71-27005* #	US-PATENT-CLASS-23-232R	c 06	N73-16106* #	US-PATENT-CLASS-235-152	c 08	N72-25210* #
US-PATENT-CLASS-222-145	c 37	N76-19436* #	US-PATENT-CLASS-23-232R	c 45	N76-31714* #	US-PATENT-CLASS-235-152	c 08	N73-12175* #
US-PATENT-CLASS-222-193	c 37	N74-13178* #	US-PATENT-CLASS-23-232R	c 23	N77-17161* #	US-PATENT-CLASS-235-152	c 09	N73-13209* #
US-PATENT-CLASS-222-309	c 15	N72-21465* #	US-PATENT-CLASS-23-232R	c 25	N78-15210* #	US-PATENT-CLASS-235-152	c 08	N73-26175* #
US-PATENT-CLASS-222-309	c 54	N74-12779* #	US-PATENT-CLASS-23-252R	c 25	N74-12813* #	US-PATENT-CLASS-235-152	c 60	N77-14751* #
US-PATENT-CLASS-222-324	c 54	N74-17853* #	US-PATENT-CLASS-23-252R	c 25	N79-10162* #	US-PATENT-CLASS-235-153AE	c 60	N76-21914* #
US-PATENT-CLASS-222-340	c 54	N74-12779* #	US-PATENT-CLASS-23-252R	c 25	N79-28253* #	US-PATENT-CLASS-235-153AK	c 62	N74-14920* #
US-PATENT-CLASS-222-387	c 54	N74-12779* #	US-PATENT-CLASS-23-253A	c 51	N77-27677* #	US-PATENT-CLASS-235-153	c 08	N71-24633* #
US-PATENT-CLASS-222-389	c 15	N70-38996* #	US-PATENT-CLASS-23-253A	c 54	N78-14784* #	US-PATENT-CLASS-235-153	c 08	N72-22166* #
US-PATENT-CLASS-222-414	c 14	N73-27378* #	US-PATENT-CLASS-23-253PC	c 06	N72-17094* #	US-PATENT-CLASS-235-154	c 08	N70-34778* #
US-PATENT-CLASS-222-45	c 14	N70-40233* #	US-PATENT-CLASS-23-253PC	c 37	N74-18123* #	US-PATENT-CLASS-235-154	c 10	N71-23662* #
US-PATENT-CLASS-222-49	c 14	N71-27005* #	US-PATENT-CLASS-23-253R	c 15	N72-21465* #	US-PATENT-CLASS-235-154	c 08	N72-18184* #
US-PATENT-CLASS-222-514	c 54	N74-12779* #	US-PATENT-CLASS-23-253R	c 25	N75-14844* #	US-PATENT-CLASS-235-154	c 08	N72-25206* #
US-PATENT-CLASS-222-61	c 27	N71-29155* #	US-PATENT-CLASS-23-253R	c 25	N76-18245* #	US-PATENT-CLASS-235-155	c 08	N71-24890* #
US-PATENT-CLASS-222-61	c 37	N77-28487* #	US-PATENT-CLASS-23-253	c 23	N71-16355* #	US-PATENT-CLASS-235-155	c 08	N72-21197* #
US-PATENT-CLASS-222-71	c 15	N72-21465* #	US-PATENT-CLASS-23-253	c 06	N71-26754* #	US-PATENT-CLASS-235-155	c 08	N73-12176* #
US-PATENT-CLASS-222-95	c 37	N77-28487* #	US-PATENT-CLASS-23-253	c 06	N72-17095* #	US-PATENT-CLASS-235-156	c 08	N71-18693* #
US-PATENT-CLASS-224-25A	c 05	N72-23085* #	US-PATENT-CLASS-23-254EF	c 35	N76-18403* #	US-PATENT-CLASS-235-156	c 60	N75-13539* #
US-PATENT-CLASS-224-25	c 05	N71-12351* #	US-PATENT-CLASS-23-254E	c 06	N73-16106* #	US-PATENT-CLASS-235-156	c 32	N76-21366* #
US-PATENT-CLASS-224-444	c 54	N74-17853* #	US-PATENT-CLASS-23-254E	c 33	N75-26245* #	US-PATENT-CLASS-235-156	c 32	N77-10392* #
US-PATENT-CLASS-225-103	c 37	N82-32730* #	US-PATENT-CLASS-23-254E	c 35	N75-29380* #	US-PATENT-CLASS-235-156	c 38	N77-17395* #
US-PATENT-CLASS-225-1	c 15	N71-17628* #	US-PATENT-CLASS-23-254E	c 45	N76-21742* #	US-PATENT-CLASS-235-156	c 38	N78-17396* #
US-PATENT-CLASS-225-2	c 26	N71-14354* #	US-PATENT-CLASS-23-254R	c 06	N73-16106* #	US-PATENT-CLASS-235-158	c 08	N71-19437* #
US-PATENT-CLASS-226-190	c 08	N71-19420* #	US-PATENT-CLASS-23-254R	c 25	N76-18245* #	US-PATENT-CLASS-235-164	c 08	N71-33110* #
US-PATENT-CLASS-226-58	c 14	N71-28935* #	US-PATENT-CLASS-23-254R	c 23	N77-17161* #	US-PATENT-CLASS-235-164	c 08	N73-26175* #
US-PATENT-CLASS-228-107	c 37	N79-13364* #	US-PATENT-CLASS-23-254	c 14	N71-20442* #	US-PATENT-CLASS-235-164	c 60	N74-20836* #
US-PATENT-CLASS-228-116	c 37	N81-19455* #	US-PATENT-CLASS-23-255E	c 35	N75-28380* #	US-PATENT-CLASS-235-175	c 08	N71-18602* #
US-PATENT-CLASS-228-118	c 24	N81-17170* #	US-PATENT-CLASS-23-255R	c 25	N76-18245* #	US-PATENT-CLASS-235-175	c 08	N71-33110* #
US-PATENT-CLASS-228-118	c							



US-PATENT-CLASS-235-181	c 35	N75-21582* #	US-PATENT-CLASS-239-265 43	c 28	N71-16224*	US-PATENT-CLASS-244-121	c 24	N79-25142* #
US-PATENT-CLASS-235-181	c 33	N75-26243* #	US-PATENT-CLASS-239-265 43	c 28	N72-11708*	US-PATENT-CLASS-244-121	c 15	N79-26100* #
US-PATENT-CLASS-235-181	c 43	N77-10584* #	US-PATENT-CLASS-239-288	c 37	N79-22474* #	US-PATENT-CLASS-244-121	c 27	N82-24339* #
US-PATENT-CLASS-235-181	c 38	N78-17395* #	US-PATENT-CLASS-239-302	c 37	N80-10494* #	US-PATENT-CLASS-244-121	c 27	N82-29456* #
US-PATENT-CLASS-235-183	c 08	N72-22165* #	US-PATENT-CLASS-239-416	c 15	N69-23185* #	US-PATENT-CLASS-244-122	c 05	N71-20716* #
US-PATENT-CLASS-235-184	c 74	N76-18913* #	US-PATENT-CLASS-239-416	c 15	N71-17654*	US-PATENT-CLASS-244-123	c 24	N77-28225* #
US-PATENT-CLASS-235-186	c 10	N73-26230* #	US-PATENT-CLASS-239-424	c 15	N72-23809* #	US-PATENT-CLASS-244-123	c 24	N82-24296* #
US-PATENT-CLASS-235-194	c 09	N71-19480*	US-PATENT-CLASS-239-433	c 28	N72-25455* #	US-PATENT-CLASS-244-123	c 24	N82-26384* #
US-PATENT-CLASS-235-194	c 08	N72-22165* #	US-PATENT-CLASS-239-499	c 34	N82-13376* #	US-PATENT-CLASS-244-127	c 34	N74-23039* #
US-PATENT-CLASS-235-194	c 10	N73-26230* #	US-PATENT-CLASS-239-543	c 28	N72-23809* #	US-PATENT-CLASS-244-130	c 02	N70-33332* #
US-PATENT-CLASS-235-197	c 08	N72-22165* #	US-PATENT-CLASS-239-562	c 43	N81-26509* #	US-PATENT-CLASS-244-130	c 02	N77-10001* #
US-PATENT-CLASS-235-197	c 09	N72-23173* #	US-PATENT-CLASS-239-589	c 34	N82-13376* #	US-PATENT-CLASS-244-130	c 02	N81-14968* #
US-PATENT-CLASS-235-197	c 10	N73-20253* #	US-PATENT-CLASS-239-591	c 43	N81-26509* #	US-PATENT-CLASS-244-130	c 37	N81-24443* #
US-PATENT-CLASS-235-197	c 10	N73-26230* #	US-PATENT-CLASS-239-690	c 34	N82-13376* #	US-PATENT-CLASS-244-132	c 24	N82-26384* #
US-PATENT-CLASS-235-201	c 60	N75-13539* #	US-PATENT-CLASS-239-690	c 28	N82-18401* #	US-PATENT-CLASS-244-132	c 24	N82-32417* #
US-PATENT-CLASS-235-207	c 10	N71-25899*	US-PATENT-CLASS-24-126	c 15	N71-22994*	US-PATENT-CLASS-244-135R	c 34	N76-17317* #
US-PATENT-CLASS-235-61 6	c 01	N71-13411* #	US-PATENT-CLASS-24-134R	c 15	N73-25512* #	US-PATENT-CLASS-244-135R	c 20	N80-10278* #
US-PATENT-CLASS-235-61 6	c 15	N71-21179*	US-PATENT-CLASS-24-205.17	c 15	N71-25975*	US-PATENT-CLASS-244-135	c 31	N70-42015* #
US-PATENT-CLASS-235-61NV	c 08	N72-11172*	US-PATENT-CLASS-24-211N	c 15	N72-11385*	US-PATENT-CLASS-244-135	c 15	N73-12486* #
US-PATENT-CLASS-235-61NV	c 35	N76-29552* #	US-PATENT-CLASS-24-211	c 15	N71-17653*	US-PATENT-CLASS-244-135	c 14	N73-27378* #
US-PATENT-CLASS-235-70	c 04	N78-17031* #	US-PATENT-CLASS-24-263	c 15	N71-21076*	US-PATENT-CLASS-244-137P	c 31	N73-26876* #
US-PATENT-CLASS-235-78M	c 35	N76-29552* #	US-PATENT-CLASS-24-263	c 15	N71-26162*	US-PATENT-CLASS-244-137P	c 37	N76-22540* #
US-PATENT-CLASS-235-88M	c 35	N76-29552* #	US-PATENT-CLASS-240-1.2	c 11	N70-33329*	US-PATENT-CLASS-244-137R	c 08	N82-32373* #
US-PATENT-CLASS-235-92CA	c 33	N74-10223* #	US-PATENT-CLASS-240-11.2	c 09	N71-26787*	US-PATENT-CLASS-244-138	c 01	N69-39981* #
US-PATENT-CLASS-235-92CA	c 38	N77-17495* #	US-PATENT-CLASS-240-11 4	c 09	N71-26787*	US-PATENT-CLASS-244-138	c 02	N70-41630* #
US-PATENT-CLASS-235-92CC	c 08	N72-20176* #	US-PATENT-CLASS-240-41 35R	c 74	N77-21941* #	US-PATENT-CLASS-244-138	c 31	N71-16085* #
US-PATENT-CLASS-235-92CT	c 38	N77-17495* #	US-PATENT-CLASS-240-41B	c 36	N75-27364* #	US-PATENT-CLASS-244-138	c 31	N71-25434* #
US-PATENT-CLASS-235-92CV	c 08	N73-25206* #	US-PATENT-CLASS-240-41R	c 74	N77-21941* #	US-PATENT-CLASS-244-138	c 31	N71-28851* #
US-PATENT-CLASS-235-92DE	c 08	N72-20176* #	US-PATENT-CLASS-240-46 13	c 74	N77-21941* #	US-PATENT-CLASS-244-139	c 31	N73-13898* #
US-PATENT-CLASS-235-92DM	c 08	N72-20176* #	US-PATENT-CLASS-240-47	c 34	N74-23066* #	US-PATENT-CLASS-244-139	c 02	N76-16014* #
US-PATENT-CLASS-235-92DM	c 33	N74-10223* #	US-PATENT-CLASS-240-51 11	c 09	N71-26787*	US-PATENT-CLASS-244-13	c 01	N71-23497* #
US-PATENT-CLASS-235-92DM	c 33	N75-19519* #	US-PATENT-CLASS-242-128	c 15	N82-24272* #	US-PATENT-CLASS-244-13	c 02	N73-26005* #
US-PATENT-CLASS-235-92DN	c 08	N73-25206* #	US-PATENT-CLASS-242-187	c 37	N77-14479* #	US-PATENT-CLASS-244-13	c 05	N75-25914* #
US-PATENT-CLASS-235-92DN	c 38	N77-17495* #	US-PATENT-CLASS-242-192	c 14	N71-23698*	US-PATENT-CLASS-244-140	c 02	N70-38009* #
US-PATENT-CLASS-235-92EA	c 08	N73-25206* #	US-PATENT-CLASS-242-193	c 37	N77-14479* #	US-PATENT-CLASS-244-145	c 02	N74-10034* #
US-PATENT-CLASS-235-92EV	c 08	N73-25206* #	US-PATENT-CLASS-242-204	c 37	N77-14479* #	US-PATENT-CLASS-244-14	c 14	N70-33322* #
US-PATENT-CLASS-235-92FQ	c 08	N73-20217* #	US-PATENT-CLASS-242-210	c 37	N77-14479* #	US-PATENT-CLASS-244-15 5	c 31	N72-18859* #
US-PATENT-CLASS-235-92LG	c 08	N72-20176* #	US-PATENT-CLASS-242-54	c 15	N72-18477* #	US-PATENT-CLASS-244-150	c 15	N71-24600* #
US-PATENT-CLASS-235-92LG	c 33	N75-19519* #	US-PATENT-CLASS-242-55 19	c 14	N70-41647* #	US-PATENT-CLASS-244-151R	c 33	N74-22865* #
US-PATENT-CLASS-235-92MT	c 08	N72-31226* #	US-PATENT-CLASS-242-55 19	c 07	N71-10609* #	US-PATENT-CLASS-244-152	c 02	N70-36804* #
US-PATENT-CLASS-235-92MT	c 32	N73-26910* #	US-PATENT-CLASS-242-57	c 37	N77-14479* #	US-PATENT-CLASS-244-155	c 30	N73-12884* #
US-PATENT-CLASS-235-92PC	c 35	N82-11431* #	US-PATENT-CLASS-244 12.2	c 05	N82-26277* #	US-PATENT-CLASS-244-155	c 31	N73-14854* #
US-PATENT-CLASS-235-92PE	c 37	N74-21056* #	US-PATENT-CLASS-244-155	c 03	N72-20031* #	US-PATENT-CLASS-244-158A	c 27	N82-24339* #
US-PATENT-CLASS-235-92R	c 08	N72-20176* #	US-PATENT-CLASS-244-1A	c 03	N73-20040* #	US-PATENT-CLASS-244-158A	c 27	N82-29456* #
US-PATENT-CLASS-235-92R	c 08	N73-20217* #	US-PATENT-CLASS-244-1A	c 33	N77-10429* #	US-PATENT-CLASS-244-158A	c 24	N82-32417* #
US-PATENT-CLASS-235-92R	c 08	N73-25206* #	US-PATENT-CLASS-244-1R	c 34	N79-31523* #	US-PATENT-CLASS-244-158R	c 31	N81-25258* #
US-PATENT-CLASS-235-92R	c 33	N75-19519* #	US-PATENT-CLASS-244-1SA	c 21	N72-25540* #	US-PATENT-CLASS-244-158	c 37	N76-22540* #
US-PATENT-CLASS-235-92R	c 38	N77-17495* #	US-PATENT-CLASS-244-1SA	c 21	N72-25595* #	US-PATENT-CLASS-244-158	c 27	N79-12221* #
US-PATENT-CLASS-235-92SB	c 37	N74-21056* #	US-PATENT-CLASS-244-1SA	c 03	N73-20039* #	US-PATENT-CLASS-244-159	c 18	N79-11108* #
US-PATENT-CLASS-235-92SH	c 33	N76-14373* #	US-PATENT-CLASS-244-1SA	c 15	N73-25513* #	US-PATENT-CLASS-244-15	c 05	N75-25914* #
US-PATENT-CLASS-235-92T	c 03	N72-25020* #	US-PATENT-CLASS-244-1SA	c 21	N73-30640* #	US-PATENT-CLASS-244-160	c 27	N79-12221* #
US-PATENT-CLASS-235-92T	c 08	N73-20217* #	US-PATENT-CLASS-244-1SA	c 19	N74-15089* #	US-PATENT-CLASS-244-160	c 43	N81-17499* #
US-PATENT-CLASS-235-92T	c 33	N75-19519* #	US-PATENT-CLASS-244-1SA	c 35	N74-28097* #	US-PATENT-CLASS-244-160	c 14	N81-26161* #
US-PATENT-CLASS-235-92VA	c 33	N75-19519* #	US-PATENT-CLASS-244-1SB	c 15	N73-12486* #	US-PATENT-CLASS-244-160	c 27	N82-24339* #
US-PATENT-CLASS-235-92	c 08	N71-22897*	US-PATENT-CLASS-244-1SC	c 31	N73-32750* #	US-PATENT-CLASS-244-160	c 27	N82-29456* #
US-PATENT-CLASS-235-92	c 08	N71-24891*	US-PATENT-CLASS-244-1SC	c 34	N75-12222* #	US-PATENT-CLASS-244-161	c 18	N76-14186* #
US-PATENT-CLASS-235-92	c 10	N71-27137*	US-PATENT-CLASS-244-1SD	c 31	N73-26876* #	US-PATENT-CLASS-244-161	c 37	N76-22540* #
US-PATENT-CLASS-235-92	c 14	N71-27215*	US-PATENT-CLASS-244-1SD	c 37	N74-27903* #	US-PATENT-CLASS-244-161	c 37	N77-23483* #
US-PATENT-CLASS-236-1F	c 35	N81-26431* #	US-PATENT-CLASS-244-1SD	c 15	N77-10112* #	US-PATENT-CLASS-244-161	c 15	N76-25119* #
US-PATENT-CLASS-236-13	c 31	N80-32583* #	US-PATENT-CLASS-244-1SS	c 11	N73-13257* #	US-PATENT-CLASS-244-161	c 37	N80-14398* #
US-PATENT-CLASS-236-1	c 33	N71-16357*	US-PATENT-CLASS-244-1SS	c 03	N73-20039* #	US-PATENT-CLASS-244-161	c 37	N81-14320* #
US-PATENT-CLASS-236-44C	c 31	N80-32583* #	US-PATENT-CLASS-244-1SS	c 14	N73-27378* #	US-PATENT-CLASS-244-161	c 37	N81-27519* #
US-PATENT-CLASS-236-49	c 31	N74-27902* #	US-PATENT-CLASS-244-1SS	c 31	N73-30829* #	US-PATENT-CLASS-244-162	c 18	N75-19329* #
US-PATENT-CLASS-236-49	c 31	N80-32583* #	US-PATENT-CLASS-244-1SS	c 31	N73-32750* #	US-PATENT-CLASS-244-162	c 18	N76-17185* #
US-PATENT-CLASS-236-68	c 15	N72-12409* #	US-PATENT-CLASS-244-1SS	c 33	N73-32818* #	US-PATENT-CLASS-244-163	c 37	N76-19437* #
US-PATENT-CLASS-237-1A	c 44	N76-14602* #	US-PATENT-CLASS-244-1SS	c 18	N74-22136* #	US-PATENT-CLASS-244-163	c 24	N79-25142* #
US-PATENT-CLASS-237-1A	c 44	N78-10554* #	US-PATENT-CLASS-244-1SS	c 18	N74-27397* #	US-PATENT-CLASS-244-163	c 34	N79-31523* #
US-PATENT-CLASS-237-1A	c 44	N78-15560* #	US-PATENT-CLASS-244-1SS	c 73	N75-30876* #	US-PATENT-CLASS-244-163	c 05	N81-26114* #
US-PATENT-CLASS-237-1A	c 44	N78-17460* #	US-PATENT-CLASS-244-100	c 15	N70-34850* #	US-PATENT-CLASS-244-163	c 37	N82-16408* #
US-PATENT-CLASS-237-1A	c 44	N78-31525* #	US-PATENT-CLASS-244-100	c 31	N70-36654* #	US-PATENT-CLASS-244-163	c 27	N82-29456* #
US-PATENT-CLASS-237-1A	c 44	N79-24433* #	US-PATENT-CLASS-244-100	c 31	N70-36845* #	US-PATENT-CLASS-244-165	c 15	N76-14158* #
US-PATENT-CLASS-237-60	c 34	N76-17317* #	US-PATENT-CLASS-244-100	c 02	N70-41589* #	US-PATENT-CLASS-244-165	c 35	N77-20399* #
US-PATENT-CLASS-238-134	c 85	N74-34672* #	US-PATENT-CLASS-244-103R	c 37	N81-24443* #	US-PATENT-CLASS-244-165	c 35	N80-27179* #
US-PATENT-CLASS-238-1	c 05	N71-28819*	US-PATENT-CLASS-244-103	c 02	N70-36825* #	US-PATENT-CLASS-244-167	c 15	N76-25119* #
US-PATENT-CLASS-239-102	c 37	N80-10494* #	US-PATENT-CLASS-244-110B	c 07	N82-26293* #	US-PATENT-CLASS-244-168	c 04	N82-23231* #
US-PATENT-CLASS-239-127 1	c 28	N71-23968*	US-PATENT-CLASS-244-110C	c 37	N82-18601* #	US-PATENT-CLASS-244-169	c 15	N77-10113* #
US-PATENT-CLASS-239-127 1	c 28	N73-32606* #	US-PATENT-CLASS-244-113	c 02	N70-37939* #	US-PATENT-CLASS-244-16	c 02	N74-18663* #
US-PATENT-CLASS-239-127 1	c 34	N79-13288* #	US-PATENT-CLASS-244-113	c 31	N71-25434*	US-PATENT-CLASS-244-17 13	c 02	N73-19004* #
US-PATENT-CLASS-239-127 1	c 34	N79-13289* #	US-PATENT-CLASS-244-113	c 02	N77-10001* #	US-PATENT-CLASS-244-17 13	c 08	N79-23097* #
US-PATENT-CLASS-239-127 1	c 34	N80-24573* #	US-PATENT-CLASS-244-113	c 37	N82-16408* #	US-PATENT-CLASS-244-17 25	c 05	N81-19087* #
US-PATENT-CLASS-239-127 1	c 44	N81-24519* #	US-PATENT-CLASS-244-114R	c 04	N82-16059* #	US-PATENT-CLASS-244-170	c 35	N80-27179* #
US-PATENT-CLASS-239-127 3	c 20	N76-14191* #	US-PATENT-CLASS-244-114	c 21	N72-22619* #	US-PATENT-CLASS-244-171	c 15	N77-10113* #
US-PATENT-CLASS-239-127 3	c 07	N80-32392* #	US-PATENT-CLASS-244-117A	c 33	N73-25952* #	US-PATENT-CLASS-244-171	c 35	N77-20399* #
US-PATENT-CLASS-239-171	c 37	N77-13418* #	US-PATENT-CLASS-244-117A	c 34	N76-17317* #	US-PATENT-CLASS-244-172	c 18	N76-17185* #
US-PATENT-CLASS-239-265 11	c 18	N71-21068*	US-PATENT-CLASS-244-117A	c 37	N76-19437* #	US-PATENT-CLASS-244-173	c 44	N75-32581* #
US-PATENT-CLASS-239-265 11	c 07	N74-33218* #	US-PATENT-CLASS-244-117A	c 34	N77-18382* #	US-PATENT-CLASS-244-173	c 37	N81-15364* #
US-PATENT-CLASS-239-265 11	c 07	N76-18117* #	US-PATENT-CLASS-244-117A	c 05	N81-26114* #	US-PATENT-CLASS-244-175	c 04	N82-23231* #
US-PATENT-CLASS-239-265.15	c 37	N72-22474* #	US-PATENT-CLASS-244-117	c 31	N70-33242*	US-PATENT-CLASS-244-181	c 08	N81-24106* #
US-PATENT-CLASS-239-265.17	c 07	N74-27490* #	US-PATENT-CLASS-244-117	c 33	N72-17947* #	US-PATENT-CLASS-244-181	c 08	N81-26152* #
US-PATENT-CLASS-239-265 19	c 28	N71-21493*	US-PATENT-CLASS-244-118 1	c 08	N82-32373* #	US-PATENT-CLASS-244-182	c 08	N81-26152* #
US-PATENT-CLASS-239-265 19	c 28	N72-11708*	US-PATENT-CLASS-244-119	c 02	N81-14968* #	US-PATENT-CLASS-244-190	c 04	N82-23231* #
US-PATENT-CLASS-239-265 25	c 07	N78-27121* #	US-PATENT-CLASS-244-119	c 24	N82-24296* #	US-PATENT-CLASS-244-194	c 60	N82-29013* #
US-PATENT-CLASS-239-265 25	c 09	N78-31129* #	US-PATENT-CLASS-244-119	c 24	N82-26384* #	US-PATENT-CLASS-244-195	c 08	N79-23097* #
US-PATENT-CLASS-239-265 33	c 07	N78-27121* #	US-PATENT-CLASS-244-12 5	c 28	N81-19130* #	US-PATENT-CLASS-244-1	c 08	N81-24106* #
US-PATENT-CLASS-239-265.33	c 07	N80-32392* #	US-PATENT-CLASS-244-121	c 27	N79-12221			



US-PATENT-CLASS-244-1	c 33	N70-33344*	US-PATENT-CLASS-244-45A	c 05	N78-32086*	US-PATENT-CLASS-248	c 25	N79-28253*
US-PATENT-CLASS-244-1	c 03	N70-34157*	US-PATENT-CLASS-244-45	c 02	N71-12243*	US-PATENT-CLASS-249-144	c 31	N75-13111*
US-PATENT-CLASS-244-1	c 31	N70-34176*	US-PATENT-CLASS-244-46	c 02	N70-33266*	US-PATENT-CLASS-249-145	c 31	N74-32920*
US-PATENT-CLASS-244-1	c 21	N70-34295*	US-PATENT-CLASS-244-46	c 02	N70-33286*	US-PATENT-CLASS-249-145	c 31	N75-13111*
US-PATENT-CLASS-244-1	c 31	N70-34296*	US-PATENT-CLASS-244-46	c 02	N70-34178*	US-PATENT-CLASS-249-184	c 31	N74-32920*
US-PATENT-CLASS-244-1	c 21	N70-35395*	US-PATENT-CLASS-244-46	c 02	N70-34858*	US-PATENT-CLASS-249-59	c 31	N75-13111*
US-PATENT-CLASS-244-1	c 31	N70-36410*	US-PATENT-CLASS-244-46	c 02	N70-38010*	US-PATENT-CLASS-249-85	c 31	N74-32920*
US-PATENT-CLASS-244-1	c 33	N70-36617*	US-PATENT-CLASS-244-46	c 31	N70-38011*	US-PATENT-CLASS-25-156	c 31	N74-32920*
US-PATENT-CLASS-244-1	c 21	N70-36943*	US-PATENT-CLASS-244-46	c 02	N70-38011*	US-PATENT-CLASS-250-105	c 15	N71-16076*
US-PATENT-CLASS-244-1	c 31	N70-37924*	US-PATENT-CLASS-244-46	c 02	N71-11041*	US-PATENT-CLASS-250-105	c 14	N70-40240*
US-PATENT-CLASS-244-1	c 31	N70-37938*	US-PATENT-CLASS-244-46	c 02	N73-26005*	US-PATENT-CLASS-250-199	c 14	N73-30389*
US-PATENT-CLASS-244-1	c 31	N70-37986*	US-PATENT-CLASS-244-46	c 05	N76-29217*	US-PATENT-CLASS-250-199	c 16	N69-27491*
US-PATENT-CLASS-244-1	c 31	N70-38676*	US-PATENT-CLASS-244-46	c 05	N78-32086*	US-PATENT-CLASS-250-199	c 07	N71-12389*
US-PATENT-CLASS-244-1	c 30	N70-40016*	US-PATENT-CLASS-244-46	c 08	N79-14108*	US-PATENT-CLASS-250-199	c 16	N71-22895*
US-PATENT-CLASS-244-1	c 31	N70-41373*	US-PATENT-CLASS-244-48	c 05	N79-12061*	US-PATENT-CLASS-250-199	c 16	N71-25914*
US-PATENT-CLASS-244-1	c 31	N70-41588*	US-PATENT-CLASS-244-48	c 05	N82-28279*	US-PATENT-CLASS-250-199	c 16	N71-27183*
US-PATENT-CLASS-244-1	c 31	N70-41631*	US-PATENT-CLASS-244-49	c 43	N81-17499*	US-PATENT-CLASS-250-199	c 16	N71-28963*
US-PATENT-CLASS-244-1	c 31	N70-41855*	US-PATENT-CLASS-244-4	c 05	N69-21380*	US-PATENT-CLASS-250-199	c 16	N73-16536*
US-PATENT-CLASS-244-1	c 21	N70-41856*	US-PATENT-CLASS-244-4	c 05	N71-12336*	US-PATENT-CLASS-250-199	c 07	N73-26119*
US-PATENT-CLASS-244-1	c 31	N70-42075*	US-PATENT-CLASS-244-4	c 28	N71-27585*	US-PATENT-CLASS-250-199	c 74	N76-18913*
US-PATENT-CLASS-244-1	c 03	N71-11058*	US-PATENT-CLASS-244-50	c 02	N70-34160*	US-PATENT-CLASS-250-199	c 74	N76-30053*
US-PATENT-CLASS-244-1	c 33	N71-14035*	US-PATENT-CLASS-244-51	c 02	N70-34856*	US-PATENT-CLASS-250-199	c 74	N77-26942*
US-PATENT-CLASS-244-1	c 21	N71-14132*	US-PATENT-CLASS-244-52	c 08	N81-19130*	US-PATENT-CLASS-250-199	c 32	N77-28346*
US-PATENT-CLASS-244-1	c 21	N71-14159*	US-PATENT-CLASS-244-53A	c 07	N78-18066*	US-PATENT-CLASS-250-199	c 60	N77-32731*
US-PATENT-CLASS-244-1	c 21	N71-15583*	US-PATENT-CLASS-244-53B	c 02	N74-20646*	US-PATENT-CLASS-250-199	c 74	N78-14889*
US-PATENT-CLASS-244-1	c 31	N71-15663*	US-PATENT-CLASS-244-53B	c 07	N75-24736*	US-PATENT-CLASS-250-201	c 14	N70-40238*
US-PATENT-CLASS-244-1	c 31	N71-15674*	US-PATENT-CLASS-244-53B	c 07	N77-18154*	US-PATENT-CLASS-250-201	c 35	N75-15014*
US-PATENT-CLASS-244-1	c 31	N71-15676*	US-PATENT-CLASS-244-53B	c 05	N79-24976*	US-PATENT-CLASS-250-201	c 74	N78-17866*
US-PATENT-CLASS-244-1	c 02	N71-16087*	US-PATENT-CLASS-244-53B	c 85	N82-33288*	US-PATENT-CLASS-250-203R	c 14	N72-27409*
US-PATENT-CLASS-244-1	c 31	N71-16222*	US-PATENT-CLASS-244-53	c 28	N71-15563*	US-PATENT-CLASS-250-203R	c 14	N73-25462*
US-PATENT-CLASS-244-1	c 31	N71-16345*	US-PATENT-CLASS-244-54	c 07	N78-18066*	US-PATENT-CLASS-250-203R	c 14	N73-28490*
US-PATENT-CLASS-244-1	c 31	N71-16346*	US-PATENT-CLASS-244-54	c 07	N79-14096*	US-PATENT-CLASS-250-203R	c 21	N73-30640*
US-PATENT-CLASS-244-1	c 31	N71-17679*	US-PATENT-CLASS-244-55	c 02	N73-26005*	US-PATENT-CLASS-250-203R	c 19	N74-15089*
US-PATENT-CLASS-244-1	c 15	N71-17693*	US-PATENT-CLASS-244-55	c 05	N75-25914*	US-PATENT-CLASS-250-203R	c 89	N74-30886*
US-PATENT-CLASS-244-1	c 31	N71-17729*	US-PATENT-CLASS-244-57	c 15	N71-26611*	US-PATENT-CLASS-250-203R	c 35	N77-20401*
US-PATENT-CLASS-244-1	c 15	N71-19214*	US-PATENT-CLASS-244-63	c 09	N77-19076*	US-PATENT-CLASS-250-203R	c 74	N77-22951*
US-PATENT-CLASS-244-1	c 03	N71-20273*	US-PATENT-CLASS-244-63	c 14	N81-26161*	US-PATENT-CLASS-250-203R	c 44	N81-24520*
US-PATENT-CLASS-244-1	c 31	N71-20396*	US-PATENT-CLASS-244-75A	c 02	N73-26004*	US-PATENT-CLASS-250-203X	c 16	N72-13437*
US-PATENT-CLASS-244-1	c 31	N71-21064*	US-PATENT-CLASS-244-75R	c 05	N75-12930*	US-PATENT-CLASS-250-203	c 14	N69-27432*
US-PATENT-CLASS-244-1	c 14	N71-21082*	US-PATENT-CLASS-244-76C	c 02	N73-26004*	US-PATENT-CLASS-250-203	c 14	N69-27485*
US-PATENT-CLASS-244-1	c 21	N71-21708*	US-PATENT-CLASS-244-76	c 21	N70-34539*	US-PATENT-CLASS-250-203	c 07	N69-39736*
US-PATENT-CLASS-244-1	c 31	N71-21881*	US-PATENT-CLASS-244-76	c 02	N71-13422*	US-PATENT-CLASS-250-203	c 14	N70-34158*
US-PATENT-CLASS-244-1	c 33	N71-22792*	US-PATENT-CLASS-244-76	c 02	N71-20570*	US-PATENT-CLASS-250-203	c 21	N70-35089*
US-PATENT-CLASS-244-1	c 31	N71-22968*	US-PATENT-CLASS-244-77A	c 04	N74-13420*	US-PATENT-CLASS-250-203	c 14	N70-40239*
US-PATENT-CLASS-244-1	c 31	N71-22969*	US-PATENT-CLASS-244-77B	c 04	N74-13420*	US-PATENT-CLASS-250-203	c 21	N71-10677*
US-PATENT-CLASS-244-1	c 31	N71-23009*	US-PATENT-CLASS-244-77D	c 02	N73-19004*	US-PATENT-CLASS-250-203	c 21	N71-10771*
US-PATENT-CLASS-244-1	c 14	N71-23040*	US-PATENT-CLASS-244-77F	c 02	N73-26004*	US-PATENT-CLASS-250-203	c 21	N71-15642*
US-PATENT-CLASS-244-1	c 31	N71-23912*	US-PATENT-CLASS-244-77G	c 02	N73-26004*	US-PATENT-CLASS-250-203	c 14	N71-19568*
US-PATENT-CLASS-244-1	c 31	N71-24315*	US-PATENT-CLASS-244-77	c 32	N71-23971*	US-PATENT-CLASS-250-203	c 14	N71-23269*
US-PATENT-CLASS-244-1	c 15	N71-24600*	US-PATENT-CLASS-244-78	c 08	N82-24205*	US-PATENT-CLASS-250-203	c 14	N71-23797*
US-PATENT-CLASS-244-1	c 05	N71-24728*	US-PATENT-CLASS-244-79	c 04	N76-26175*	US-PATENT-CLASS-250-203	c 14	N72-22444*
US-PATENT-CLASS-244-1	c 33	N71-25353*	US-PATENT-CLASS-244-82	c 05	N78-12061*	US-PATENT-CLASS-250-203	c 14	N73-30393*
US-PATENT-CLASS-244-1	c 31	N71-25434*	US-PATENT-CLASS-244-83G	c 08	N79-23097*	US-PATENT-CLASS-250-203	c 35	N75-23910*
US-PATENT-CLASS-244-1	c 31	N71-26537*	US-PATENT-CLASS-244-83R	c 05	N75-12930*	US-PATENT-CLASS-250-204	c 36	N74-21091*
US-PATENT-CLASS-244-1	c 15	N71-26611*	US-PATENT-CLASS-244-83	c 21	N70-33279*	US-PATENT-CLASS-250-205	c 14	N72-27411*
US-PATENT-CLASS-244-1	c 28	N71-27095*	US-PATENT-CLASS-244-83	c 15	N71-23255*	US-PATENT-CLASS-250-205	c 09	N73-14214*
US-PATENT-CLASS-244-1	c 21	N71-27324*	US-PATENT-CLASS-244-83	c 31	N71-33160*	US-PATENT-CLASS-250-205	c 36	N74-13205*
US-PATENT-CLASS-244-1	c 33	N71-28903*	US-PATENT-CLASS-244-83	c 08	N74-10942*	US-PATENT-CLASS-250-206	c 10	N71-20782*
US-PATENT-CLASS-244-1	c 15	N71-28936*	US-PATENT-CLASS-244-87	c 08	N81-19130*	US-PATENT-CLASS-250-207	c 14	N72-17328*
US-PATENT-CLASS-244-1	c 31	N71-29050*	US-PATENT-CLASS-244-90R	c 08	N74-30421*	US-PATENT-CLASS-250-207	c 14	N73-32317*
US-PATENT-CLASS-244-1	c 31	N71-33160*	US-PATENT-CLASS-244-90R	c 05	N79-12061*	US-PATENT-CLASS-250-207	c 33	N74-27682*
US-PATENT-CLASS-244-213	c 08	N82-24205*	US-PATENT-CLASS-244-90R	c 08	N79-14108*	US-PATENT-CLASS-250-208	c 14	N72-20379*
US-PATENT-CLASS-244-217	c 37	N82-16408*	US-PATENT-CLASS-244-90R	c 02	N71-27088*	US-PATENT-CLASS-250-209	c 07	N69-39980*
US-PATENT-CLASS-244-218	c 05	N78-32086*	US-PATENT-CLASS-244-91	c 08	N74-30421*	US-PATENT-CLASS-250-209	c 20	N71-16340*
US-PATENT-CLASS-244-218	c 08	N79-14108*	US-PATENT-CLASS-244-93	c 05	N82-26277*	US-PATENT-CLASS-250-209	c 10	N72-17173*
US-PATENT-CLASS-244-226	c 08	N82-24205*	US-PATENT-CLASS-247-171	c 35	N75-23910*	US-PATENT-CLASS-250-209	c 14	N72-25409*
US-PATENT-CLASS-244-23A	c 21	N72-25595*	US-PATENT-CLASS-248-119	c 11	N70-35383*	US-PATENT-CLASS-250-209	c 14	N73-16483*
US-PATENT-CLASS-244-23C	c 05	N82-26277*	US-PATENT-CLASS-248-114	c 15	N72-17454*	US-PATENT-CLASS-250-209	c 14	N73-26432*
US-PATENT-CLASS-244-23D	c 34	N76-18364*	US-PATENT-CLASS-248-16	c 18	N74-27397*	US-PATENT-CLASS-250-209	c 14	N73-28490*
US-PATENT-CLASS-244-23	c 02	N71-11039*	US-PATENT-CLASS-248-178	c 15	N70-41310*	US-PATENT-CLASS-250-209	c 21	N73-30640*
US-PATENT-CLASS-244-2	c 14	N81-26161*	US-PATENT-CLASS-248-178	c 37	N78-27425*	US-PATENT-CLASS-250-209	c 44	N81-24520*
US-PATENT-CLASS-244-3	c 31	N71-17691*	US-PATENT-CLASS-248-183	c 14	N71-26627*	US-PATENT-CLASS-250-211J	c 09	N72-17152*
US-PATENT-CLASS-244-3	c 19	N74-15089*	US-PATENT-CLASS-248-183	c 15	N72-11386*	US-PATENT-CLASS-250-211J	c 09	N73-14214*
US-PATENT-CLASS-244-3	c 30	N72-17873*	US-PATENT-CLASS-248-186	c 37	N78-27425*	US-PATENT-CLASS-250-211J	c 35	N74-15090*
US-PATENT-CLASS-244-3.21	c 15	N76-14158*	US-PATENT-CLASS-248-188	c 15	N72-27484*	US-PATENT-CLASS-250-211K	c 74	N77-22951*
US-PATENT-CLASS-244-3.21	c 15	N77-10113*	US-PATENT-CLASS-248-188	c 31	N70-34159*	US-PATENT-CLASS-250-211K	c 44	N80-18552*
US-PATENT-CLASS-244-3.21	c 35	N77-20399*	US-PATENT-CLASS-248-18	c 14	N69-27486*	US-PATENT-CLASS-250-211R	c 36	N75-19652*
US-PATENT-CLASS-244-3.22	c 31	N71-17629*	US-PATENT-CLASS-248-18	c 15	N72-11391*	US-PATENT-CLASS-250-211R	c 35	N75-23910*
US-PATENT-CLASS-244-3.22	c 28	N72-22769*	US-PATENT-CLASS-248-20	c 15	N72-11391*	US-PATENT-CLASS-250-212	c 03	N71-23354*
US-PATENT-CLASS-244-3.22	c 20	N76-21275*	US-PATENT-CLASS-248-22	c 19	N76-22284*	US-PATENT-CLASS-250-212	c 03	N73-20040*
US-PATENT-CLASS-244-31	c 02	N71-11037*	US-PATENT-CLASS-248-23	c 18	N74-27397*	US-PATENT-CLASS-250-212	c 09	N73-32109*
US-PATENT-CLASS-244-31	c 31	N71-16081*	US-PATENT-CLASS-248-278	c 15	N72-11386*	US-PATENT-CLASS-250-213VT	c 74	N78-18905*
US-PATENT-CLASS-244-31	c 34	N74-23039*	US-PATENT-CLASS-248-27	c 15	N71-20813*	US-PATENT-CLASS-250-214AL	c 74	N79-12890*
US-PATENT-CLASS-244-327	c 08	N74-30421*	US-PATENT-CLASS-248-317	c 11	N69-27466*	US-PATENT-CLASS-250-214A	c 33	N77-14335*
US-PATENT-CLASS-244-32	c 02	N73-13008*	US-PATENT-CLASS-248-346	c 14	N70-39898*	US-PATENT-CLASS-250-214R	c 14	N73-28490*
US-PATENT-CLASS-244-34A	c 05	N82-26277*	US-PATENT-CLASS-248-358R	c 37	N75-18573*	US-PATENT-CLASS-250-214R	c 74	N79-12890*
US-PATENT-CLASS-244-35R	c 02	N76-22154*	US-PATENT-CLASS-248-358R	c 19	N76-22284*	US-PATENT-CLASS-250-214	c 14	N73-25462*
US-PATENT-CLASS-244-35	c 01	N71-13410*	US-PATENT-CLASS-248-358	c 15	N70-40156*	US-PATENT-CLASS-250-214	c 14	N73-25462*
US-PATENT-CLASS-244-40R	c 02	N76-22154*	US-PATENT-CLASS-248-358	c 23	N71-15673*	US-PATENT-CLASS-250-214	c 35	N74-15090*
US-PATENT-CLASS-244-42CG	c 33	N71-10429*	US-PATENT-CLASS-248-358	c 15	N71-24694*	US-PATENT-CLASS-250-214	c 33	N82-28545*
US-PATENT-CLASS-244-42DA	c 05	N75-25914*	US-PATENT-CLASS-248-36-3	c 37	N78-17383*	US-PATENT-CLASS-250-215	c 14	N73-16483*
US-PATENT-CLASS-244-42	c 02	N70-42016*	US-PATENT-CLASS-248-360	c 15	N71-17649*	US-PATENT-CLASS-250-216	c 74	N79-34011*
US-PATENT-CLASS-244-42	c 02	N71-26110*	US-PATENT-CLASS-248-361	c 05	N71-28619*	US-PATENT-CLASS-250-216	c 74	N82-24072*
US-PATENT-CLASS-244-43	c 02	N70-33255*	US-PATENT-CLASS-248-362	c 37	N76-21554*	US-PATENT-CLASS-250-217F	c 14	N73-16484*
US-PATENT-CLASS-244-43	c 02	N71-11043*	US-PATENT-CLASS-248-363	c 37	N76-21554*	US-PATENT-CLASS-250-217R	c 14	N73-19419*
US-PATENT-CLASS-244-44	c 02	N71-11038*	US-PATENT-CLASS-248-425	c 37	N82-21587*	US-PATENT-CLASS-250-217SS	c 14	N73-14214*
			US-PATENT-CLASS-248-487	c 15	N72-11386*		c 09	N73-14214*



US-PATENT-CLASS-250-217SS	c 36	N74-15145* #	US-PATENT-CLASS-250-344	c 25	N76-22323* #	US-PATENT-CLASS-250-492	c 37	N75-26372* #
US-PATENT-CLASS-250-217	c 14	N69-39896* #	US-PATENT-CLASS-250-344	c 74	N78-17867* #	US-PATENT-CLASS-250-493	c 73	N75-30876* #
US-PATENT-CLASS-250-217	c 14	N73-16483* #	US-PATENT-CLASS-250-345	c 45	N75-27585* #	US-PATENT-CLASS-250-495	c 74	N75-12732* #
US-PATENT-CLASS-250-217	c 36	N74-13205* #	US-PATENT-CLASS-250-347	c 35	N77-10493* #	US-PATENT-CLASS-250-496	c 73	N75-30876* #
US-PATENT-CLASS-250-218	c 14	N71-22996* #	US-PATENT-CLASS-250-347	c 47	N77-10753* #	US-PATENT-CLASS-250-498	c 52	N77-14737* #
US-PATENT-CLASS-250-218	c 14	N71-28994* #	US-PATENT-CLASS-250-347	c 74	N80-33210* #	US-PATENT-CLASS-250-499	c 73	N74-26767* #
US-PATENT-CLASS-250-218	c 74	N78-33913* #	US-PATENT-CLASS-250-350	c 25	N81-25159* #	US-PATENT-CLASS-250-499	c 72	N76-15860* #
US-PATENT-CLASS-250-219DF	c 91	N74-13130* #	US-PATENT-CLASS-250-351	c 35	N75-30502* #	US-PATENT-CLASS-250-499	c 37	N78-13436* #
US-PATENT-CLASS-250-219TH	c 26	N73-26751* #	US-PATENT-CLASS-250-351	c 35	N78-13400* #	US-PATENT-CLASS-250-500	c 72	N76-15860* #
US-PATENT-CLASS-250-219	c 14	N71-28993* #	US-PATENT-CLASS-250-352	c 31	N79-17029* #	US-PATENT-CLASS-250-500	c 74	N74-27866* #
US-PATENT-CLASS-250-221	c 33	N82-28545* #	US-PATENT-CLASS-250-352	c 34	N79-20336* #	US-PATENT-CLASS-250-505	c 35	N75-19616* #
US-PATENT-CLASS-250-225	c 14	N71-24864* #	US-PATENT-CLASS-250-352	c 35	N80-26635* #	US-PATENT-CLASS-250-505	c 35	N75-19616* #
US-PATENT-CLASS-250-225	c 14	N72-27409* #	US-PATENT-CLASS-250-353	c 74	N80-33210* #	US-PATENT-CLASS-250-508	c 35	N75-19616* #
US-PATENT-CLASS-250-226	c 14	N72-25409* #	US-PATENT-CLASS-250-353	c 35	N76-29551* #	US-PATENT-CLASS-250-51 5	c 23	N73-13662* #
US-PATENT-CLASS-250-226	c 43	N79-17288* #	US-PATENT-CLASS-250-353	c 35	N80-26635* #	US-PATENT-CLASS-250-51 5	c 14	N73-28491* #
US-PATENT-CLASS-250-226	c 74	N82-30071* #	US-PATENT-CLASS-250-359	c 37	N75-26372* #	US-PATENT-CLASS-250-511	c 74	N74-27866* #
US-PATENT-CLASS-250-227	c 14	N71-22991* #	US-PATENT-CLASS-250-360	c 35	N74-15091* #	US-PATENT-CLASS-250-513	c 35	N80-28686* #
US-PATENT-CLASS-250-227	c 14	N71-23240* #	US-PATENT-CLASS-250-361	c 35	N74-15091* #	US-PATENT-CLASS-250-518	c 14	N73-30392* #
US-PATENT-CLASS-250-227	c 60	N77-14751* #	US-PATENT-CLASS-250-363R	c 52	N77-14737* #	US-PATENT-CLASS-250-51	c 24	N72-11595* #
US-PATENT-CLASS-250-227	c 74	N78-33913* #	US-PATENT-CLASS-250-363R	c 74	N79-20857* #	US-PATENT-CLASS-250-527	c 37	N76-18458* #
US-PATENT-CLASS-250-229	c 08	N73-30135* #	US-PATENT-CLASS-250-368	c 74	N81-24900* #	US-PATENT-CLASS-250-527	c 25	N77-32255* #
US-PATENT-CLASS-250-231R	c 74	N82-30071* #	US-PATENT-CLASS-250-369	c 35	N74-15091* #	US-PATENT-CLASS-250-527	c 44	N77-32580* #
US-PATENT-CLASS-250-231SE	c 74	N74-21304* #	US-PATENT-CLASS-250-369	c 35	N82-32659* #	US-PATENT-CLASS-250-527	c 44	N79-11470* #
US-PATENT-CLASS-250-231SE	c 44	N80-18552* #	US-PATENT-CLASS-250-370	c 35	N74-18088* #	US-PATENT-CLASS-250-527	c 44	N82-16475* #
US-PATENT-CLASS-250-231	c 14	N73-20475* #	US-PATENT-CLASS-250-370	c 33	N75-31332* #	US-PATENT-CLASS-250-528	c 25	N78-25148* #
US-PATENT-CLASS-250-232	c 23	N71-21821* #	US-PATENT-CLASS-250-370	c 35	N82-31659* #	US-PATENT-CLASS-250-52	c 15	N71-15606* #
US-PATENT-CLASS-250-233	c 23	N71-16100* #	US-PATENT-CLASS-250-370	c 44	N82-32841* #	US-PATENT-CLASS-250-52	c 11	N71-23042* #
US-PATENT-CLASS-250-234	c 03	N73-20040* #	US-PATENT-CLASS-250-371	c 35	N74-18088* #	US-PATENT-CLASS-250-52	c 24	N72-11595* #
US-PATENT-CLASS-250-235	c 14	N72-11364* #	US-PATENT-CLASS-250-372	c 19	N74-29410* #	US-PATENT-CLASS-250-52	c 23	N73-13662* #
US-PATENT-CLASS-250-235	c 43	N82-13465* #	US-PATENT-CLASS-250-372	c 24	N76-24363* #	US-PATENT-CLASS-250-531	c 25	N78-25148* #
US-PATENT-CLASS-250-235	c 74	N82-24072* #	US-PATENT-CLASS-250-372	c 33	N76-27473* #	US-PATENT-CLASS-250-531	c 33	N79-15245* #
US-PATENT-CLASS-250-236	c 21	N73-30640* #	US-PATENT-CLASS-250-373	c 25	N74-26947* #	US-PATENT-CLASS-250-540	c 33	N79-15245* #
US-PATENT-CLASS-250-236	c 43	N82-13465* #	US-PATENT-CLASS-250-373	c 35	N75-30502* #	US-PATENT-CLASS-250-541	c 33	N79-15245* #
US-PATENT-CLASS-250-237G	c 74	N79-20856* #	US-PATENT-CLASS-250-373	c 45	N76-17656* #	US-PATENT-CLASS-250-551	c 74	N79-34011* #
US-PATENT-CLASS-250-237R	c 08	N73-30135* #	US-PATENT-CLASS-250-374	c 35	N74-26949* #	US-PATENT-CLASS-250-563	c 38	N78-17396* #
US-PATENT-CLASS-250-237R	c 19	N74-15089* #	US-PATENT-CLASS-250-385	c 35	N74-26949* #	US-PATENT-CLASS-250-566	c 74	N75-25706* #
US-PATENT-CLASS-250-237	c 14	N69-24331* #	US-PATENT-CLASS-250-385	c 35	N75-27331* #	US-PATENT-CLASS-250-571	c 36	N78-14380* #
US-PATENT-CLASS-250-238	c 33	N75-31332* #	US-PATENT-CLASS-250-385	c 35	N76-15433* #	US-PATENT-CLASS-250-572	c 38	N78-17395* #
US-PATENT-CLASS-250-238	c 32	N77-28346* #	US-PATENT-CLASS-250-385	c 35	N76-16393* #	US-PATENT-CLASS-250-572	c 38	N78-17396* #
US-PATENT-CLASS-250-239	c 08	N73-30135* #	US-PATENT-CLASS-250-385	c 35	N82-24471* #	US-PATENT-CLASS-250-573	c 74	N76-20958* #
US-PATENT-CLASS-250-239	c 74	N78-33913* #	US-PATENT-CLASS-250-386	c 35	N82-24471* #	US-PATENT-CLASS-250-574	c 45	N76-21742* #
US-PATENT-CLASS-250-251	c 35	N76-15431* #	US-PATENT-CLASS-250-389	c 35	N82-24471* #	US-PATENT-CLASS-250-574	c 36	N77-25501* #
US-PATENT-CLASS-250-253	c 43	N79-31706* #	US-PATENT-CLASS-250-394	c 14	N73-30392* #	US-PATENT-CLASS-250-576	c 35	N74-27860* #
US-PATENT-CLASS-250-272	c 74	N78-15880* #	US-PATENT-CLASS-250-394	c 19	N74-29410* #	US-PATENT-CLASS-250-578	c 36	N75-19652* #
US-PATENT-CLASS-250-272	c 43	N79-31706* #	US-PATENT-CLASS-250-396	c 35	N77-14408* #	US-PATENT-CLASS-250-65F	c 15	N72-25452* #
US-PATENT-CLASS-250-277CH	c 76	N78-24950* #	US-PATENT-CLASS-250-398	c 35	N78-10429* #	US-PATENT-CLASS-250-65R	c 14	N73-30389* #
US-PATENT-CLASS-250-277CH	c 74	N80-21140* #	US-PATENT-CLASS-250-400	c 25	N76-29379* #	US-PATENT-CLASS-250-71 5R	c 14	N72-29464* #
US-PATENT-CLASS-250-280	c 76	N78-24950* #	US-PATENT-CLASS-250-400	c 25	N78-27226* #	US-PATENT-CLASS-250-71 5	c 14	N72-17328* #
US-PATENT-CLASS-250-280	c 74	N80-21140* #	US-PATENT-CLASS-250-41 9D	c 14	N72-29464* #	US-PATENT-CLASS-250-71R	c 06	N73-16106* #
US-PATENT-CLASS-250-281	c 35	N74-34857* #	US-PATENT-CLASS-250-41 9G	c 14	N73-12444* #	US-PATENT-CLASS-250-71	c 14	N70-41676* #
US-PATENT-CLASS-250-281	c 35	N76-16393* #	US-PATENT-CLASS-250-41 9S	c 14	N73-12444* #	US-PATENT-CLASS-250-83 3H	c 14	N72-21408* #
US-PATENT-CLASS-250-281	c 36	N77-26477* #	US-PATENT-CLASS-250-41 9S	c 14	N77-28992* #	US-PATENT-CLASS-250-83 3H	c 14	N72-24477* #
US-PATENT-CLASS-250-281	c 72	N80-14877* #	US-PATENT-CLASS-250-41 9	c 06	N71-13461* #	US-PATENT-CLASS-250-83 3H	c 14	N73-12445* #
US-PATENT-CLASS-250-282	c 36	N77-26477* #	US-PATENT-CLASS-250-41 9	c 24	N71-16095* #	US-PATENT-CLASS-250-83 3H	c 14	N73-20475* #
US-PATENT-CLASS-250-282	c 72	N80-14877* #	US-PATENT-CLASS-250-41 9	c 14	N71-23041* #	US-PATENT-CLASS-250-83 3H	c 14	N73-25462* #
US-PATENT-CLASS-250-283	c 36	N77-26477* #	US-PATENT-CLASS-250-41 9	c 14	N71-28863* #	US-PATENT-CLASS-250-83 3R	c 14	N73-12445* #
US-PATENT-CLASS-250-287	c 35	N76-15431* #	US-PATENT-CLASS-250-41 9	c 14	N72-17328* #	US-PATENT-CLASS-250-83 3R	c 14	N73-20477* #
US-PATENT-CLASS-250-287	c 35	N76-16393* #	US-PATENT-CLASS-250-41 9	c 14	N73-32325* #	US-PATENT-CLASS-250-83 3R	c 14	N73-32317* #
US-PATENT-CLASS-250-288	c 35	N76-16393* #	US-PATENT-CLASS-250-416TV	c 35	N78-15461* #	US-PATENT-CLASS-250-83 3UV	c 10	N72-17173* #
US-PATENT-CLASS-250-288	c 35	N77-32456* #	US-PATENT-CLASS-250-423P	c 36	N77-26477* #	US-PATENT-CLASS-250-83 3UV	c 14	N72-25409* #
US-PATENT-CLASS-250-289	c 35	N77-14406* #	US-PATENT-CLASS-250-423P	c 25	N78-25148* #	US-PATENT-CLASS-250-83 3UV	c 06	N73-16106* #
US-PATENT-CLASS-250-290	c 35	N77-10492* #	US-PATENT-CLASS-250-423P	c 72	N80-14877* #	US-PATENT-CLASS-250-83 3	c 21	N70-33181* #
US-PATENT-CLASS-250-291	c 35	N77-10492* #	US-PATENT-CLASS-250-423	c 35	N76-15431* #	US-PATENT-CLASS-250-83 3	c 21	N70-34297* #
US-PATENT-CLASS-250-295	c 35	N74-34857* #	US-PATENT-CLASS-250-423	c 35	N76-16393* #	US-PATENT-CLASS-250-83 3	c 14	N71-15599* #
US-PATENT-CLASS-250-298	c 35	N77-14406* #	US-PATENT-CLASS-250-427	c 72	N80-27163* #	US-PATENT-CLASS-250-83 3	c 14	N71-18899* #
US-PATENT-CLASS-250-304	c 25	N74-26947* #	US-PATENT-CLASS-250-429	c 25	N76-29379* #	US-PATENT-CLASS-250-83 3	c 14	N71-21088* #
US-PATENT-CLASS-250-307	c 25	N80-20334* #	US-PATENT-CLASS-250-429	c 25	N78-27226* #	US-PATENT-CLASS-250-83 3	c 09	N71-22985* #
US-PATENT-CLASS-250-308	c 25	N80-20334* #	US-PATENT-CLASS-250-43 5FC	c 14	N72-11365* #	US-PATENT-CLASS-250-83 3	c 14	N71-25901* #
US-PATENT-CLASS-250-310	c 35	N78-10429* #	US-PATENT-CLASS-250-43 5R	c 14	N71-27090* #	US-PATENT-CLASS-250-83 3	c 14	N71-26475* #
US-PATENT-CLASS-250-310	c 33	N80-14332* #	US-PATENT-CLASS-250-43 5R	c 14	N72-21408* #	US-PATENT-CLASS-250-83 3	c 14	N71-27323* #
US-PATENT-CLASS-250-320	c 74	N78-15880* #	US-PATENT-CLASS-250-43 5R	c 06	N72-25146* #	US-PATENT-CLASS-250-83 3	c 14	N72-17328* #
US-PATENT-CLASS-250-322	c 35	N78-15461* #	US-PATENT-CLASS-250-43 5R	c 06	N72-31141* #	US-PATENT-CLASS-250-83 3	c 35	N75-27329* #
US-PATENT-CLASS-250-330	c 44	N82-32841* #	US-PATENT-CLASS-250-43 5	c 27	N71-16348* #	US-PATENT-CLASS-250-83 6R	c 14	N71-27090* #
US-PATENT-CLASS-250-332	c 35	N75-19613* #	US-PATENT-CLASS-250-43 5	c 15	N71-24896* #	US-PATENT-CLASS-250-83 6R	c 14	N72-20381* #
US-PATENT-CLASS-250-332	c 31	N78-25256* #	US-PATENT-CLASS-250-43 5	c 14	N71-25901* #	US-PATENT-CLASS-250-83 6R	c 25	N72-33696* #
US-PATENT-CLASS-250-332	c 35	N82-31659* #	US-PATENT-CLASS-250-432R	c 25	N76-22323* #	US-PATENT-CLASS-250-83 6R	c 74	N81-19898* #
US-PATENT-CLASS-250-335	c 34	N76-18374* #	US-PATENT-CLASS-250-432P	c 45	N75-27585* #	US-PATENT-CLASS-250-83 6	c 10	N70-41991* #
US-PATENT-CLASS-250-336	c 14	N73-28488* #	US-PATENT-CLASS-250-444	c 52	N77-14737* #	US-PATENT-CLASS-250-83CD	c 91	N74-13130* #
US-PATENT-CLASS-250-336	c 35	N76-15433* #	US-PATENT-CLASS-250-457	c 35	N80-28686* #	US-PATENT-CLASS-250-83R	c 14	N73-12445* #
US-PATENT-CLASS-250-336	c 33	N76-27473* #	US-PATENT-CLASS-250-460	c 37	N75-26372* #	US-PATENT-CLASS-250-83R	c 14	N73-20477* #
US-PATENT-CLASS-250-336	c 35	N78-13400* #	US-PATENT-CLASS-250-475	c 35	N79-10389* #	US-PATENT-CLASS-250-83	c 14	N69-27484* #
US-PATENT-CLASS-250-338	c 35	N74-18088* #	US-PATENT-CLASS-250-483	c 74	N79-20857* #	US-PATENT-CLASS-250-83	c 14	N69-39937* #
US-PATENT-CLASS-250-338	c 35	N77-10493* #	US-PATENT-CLASS-250-483	c 74	N81-24900* #	US-PATENT-CLASS-250-83	c 09	N71-18830* #
US-PATENT-CLASS-250-338	c 47	N77-10753* #	US-PATENT-CLASS-250-489	c 35	N76-15433* #	US-PATENT-CLASS-250-83	c 05	N71-19440* #
US-PATENT-CLASS-250-338	c 35	N80-26635* #	US-PATENT-CLASS-250-49 5B	c 24	N72-11595* #	US-PATENT-CLASS-250-83	c 14	N71-20430* #
US-PATENT-CLASS-250-339	c 35	N77-10493* #	US-PATENT-CLASS-250-49 5TE	c 24	N72-11595* #	US-PATENT-CLASS-250-83	c 14	N71-23401* #
US-PATENT-CLASS-250-339	c 47	N77-10753* #	US-PATENT-CLASS-250-49 5	c 14	N69-39982* #	US-PATENT-CLASS-250-83	c 09	N71-27232* #
US-PATENT-CLASS-250-340	c 35	N76-29551* #	US-PATENT-CLASS-250-49 5	c 14	N71-28863* #	US-PATENT-CLASS-250-84	c 14	N71-24809* #
US-PATENT-CLASS-250-343	c 35	N74-11284* #	US-PATENT-CLASS-250-49 5	c 14	N72-17328* #	US-PATENT-CLASS-251-118	c 15	N71-18580* #
US-PATENT-CLASS-250-343	c 25	N74-26947* #	US-PATENT-CLASS-250-491	c 35	N80-28686* #	US-PATENT-CLASS-251-118	c 15	N70-35407* #
US-PATENT-CLASS-250-343	c 45	N75-27585* #	US-PATENT-CLASS-250-492A	c 33	N80-14332* #	US-PATENT-CLASS-251-120	c 37	N72-21065* #
US-PATENT-CLASS-250-343	c 74	N76-20958* #	US-PATENT-CLASS-250-492B	c 25	N78-27226* #	US-PATENT-CLASS-251-121	c 15	N71-18580* #
US-PATENT-CLASS-250-343	c 25	N78-22323* #						



US-PATENT-CLASS-251-138	c 37	N80-23654* #	US-PATENT-CLASS-260-DIG 29	c 27	N80-24438* #	US-PATENT-CLASS-260-448 2D	c 06	N73-32030* #
US-PATENT-CLASS-251-148	c 15	N71-23024* #	US-PATENT-CLASS-260-17 2	c 24	N80-26388* #	US-PATENT-CLASS-260-448 2N	c 37	N74-21058* #
US-PATENT-CLASS-251-149 6	c 37	N76-14463* #	US-PATENT-CLASS-260-17 2	c 24	N81-13999* #	US-PATENT-CLASS-260-448 2	c 06	N71-23230* #
US-PATENT-CLASS-251-149 9	c 37	N79-11402* #	US-PATENT-CLASS-260-17 4UC	c 23	N81-29160* #	US-PATENT-CLASS-260-45 7R	c 24	N78-27180* #
US-PATENT-CLASS-251-172	c 15	N71-21234* #	US-PATENT-CLASS-260-17A	c 27	N81-14076* #	US-PATENT-CLASS-260-45 7R	c 27	N82-16238* #
US-PATENT-CLASS-251-172	c 37	N79-33469* #	US-PATENT-CLASS-260-18S	c 06	N72-25151* #	US-PATENT-CLASS-260-45 75W	c 24	N78-27180* #
US-PATENT-CLASS-251-173	c 15	N70-33376* #	US-PATENT-CLASS-260-2 1E	c 18	N72-22567* #	US-PATENT-CLASS-260-45 7	c 27	N76-24405* #
US-PATENT-CLASS-251-210	c 37	N81-21065* #	US-PATENT-CLASS-260-2 1E	c 27	N81-14076* #	US-PATENT-CLASS-260-45 85N	c 24	N78-27180* #
US-PATENT-CLASS-251-216	c 37	N81-17433* #	US-PATENT-CLASS-260-2 1E	c 25	N81-19244* #	US-PATENT-CLASS-260-45 9R	c 24	N78-27180* #
US-PATENT-CLASS-251-31	c 15	N71-19485* #	US-PATENT-CLASS-260-2 1E	c 25	N81-17187* #	US-PATENT-CLASS-260-46 5E	c 06	N72-25151* #
US-PATENT-CLASS-251-331	c 15	N72-31483* #	US-PATENT-CLASS-260-2 1	c 25	N81-17187* #	US-PATENT-CLASS-260-46 5G	c 06	N72-25151* #
US-PATENT-CLASS-251-333	c 15	N70-34859* #	US-PATENT-CLASS-260-2 2R	c 25	N81-17187* #	US-PATENT-CLASS-260-46 5P	c 06	N72-25151* #
US-PATENT-CLASS-251-333	c 12	N71-18615* #	US-PATENT-CLASS-260-2 2R	c 25	N81-19244* #	US-PATENT-CLASS-260-46 5R	c 06	N73-26100* #
US-PATENT-CLASS-251-333	c 15	N72-20442* #	US-PATENT-CLASS-260-2 5AK	c 27	N76-15310* #	US-PATENT-CLASS-260-46 5	c 06	N71-11237* #
US-PATENT-CLASS-251-333	c 37	N75-25185* #	US-PATENT-CLASS-260-2 5AK	c 24	N78-24290* #	US-PATENT-CLASS-260-46 5	c 06	N71-11240* #
US-PATENT-CLASS-251-339	c 37	N81-17433* #	US-PATENT-CLASS-260-2 5AM	c 27	N74-12812* #	US-PATENT-CLASS-260-465 5R	c 27	N81-24256* #
US-PATENT-CLASS-251-342	c 12	N71-18615* #	US-PATENT-CLASS-260-2 5AM	c 27	N77-31308* #	US-PATENT-CLASS-260-47CP	c 06	N73-27980* #
US-PATENT-CLASS-251-358	c 15	N71-17648* #	US-PATENT-CLASS-260-2 5AP	c 24	N78-24290* #	US-PATENT-CLASS-260-47CP	c 23	N76-15268* #
US-PATENT-CLASS-251-360	c 15	N72-25451* #	US-PATENT-CLASS-260-2 5AY	c 27	N77-31308* #	US-PATENT-CLASS-260-47CP	c 27	N78-31232* #
US-PATENT-CLASS-251-61 1	c 12	N71-18615* #	US-PATENT-CLASS-260-2 5A	c 27	N77-31308* #	US-PATENT-CLASS-260-47CP	c 27	N78-32261* #
US-PATENT-CLASS-251-61	c 15	N71-10778* #	US-PATENT-CLASS-260-2 5BE	c 24	N78-24290* #	US-PATENT-CLASS-260-47UP	c 06	N73-32029* #
US-PATENT-CLASS-251-7	c 37	N79-28550* #	US-PATENT-CLASS-260-2 5E	c 24	N78-24290* #	US-PATENT-CLASS-260-47	c 06	N71-28820* #
US-PATENT-CLASS-251-86	c 15	N72-31483* #	US-PATENT-CLASS-260-2 5EP	c 24	N78-24290* #	US-PATENT-CLASS-260-47	c 06	N71-28807* #
US-PATENT-CLASS-251-86	c 37	N80-23654* #	US-PATENT-CLASS-260-2 5FP	c 06	N72-25147* #	US-PATENT-CLASS-260-485F	c 06	N73-30098* #
US-PATENT-CLASS-252-12 2	c 24	N79-17916* #	US-PATENT-CLASS-260-2 5FP	c 27	N74-27037* #	US-PATENT-CLASS-260-49	c 27	N78-32261* #
US-PATENT-CLASS-252-12	c 15	N71-23810* #	US-PATENT-CLASS-260-2 5FP	c 24	N78-24290* #	US-PATENT-CLASS-260-520	c 23	N75-30256* #
US-PATENT-CLASS-252-12	c 24	N76-22309* #	US-PATENT-CLASS-260-2 5F	c 18	N73-13562* #	US-PATENT-CLASS-260-535H	c 06	N72-27144* #
US-PATENT-CLASS-252-26	c 15	N71-21403* #	US-PATENT-CLASS-260-2 5L	c 27	N74-12814* #	US-PATENT-CLASS-260-53	c 27	N79-28307* #
US-PATENT-CLASS-252-26	c 15	N71-24046* #	US-PATENT-CLASS-260-2 5N	c 24	N78-15180* #	US-PATENT-CLASS-260-544F	c 06	N72-20121* #
US-PATENT-CLASS-252-300	c 14	N72-22443* #	US-PATENT-CLASS-260-2 5N	c 27	N78-31232* #	US-PATENT-CLASS-260-551P	c 27	N78-32256* #
US-PATENT-CLASS-252-300	c 24	N76-24363* #	US-PATENT-CLASS-260-2 5R	c 27	N74-27037* #	US-PATENT-CLASS-260-566B	c 27	N76-32315* #
US-PATENT-CLASS-252-301 1R	c 35	N79-10389* #	US-PATENT-CLASS-260-2 5R	c 24	N78-15180* #	US-PATENT-CLASS-260-567 6M	c 06	N73-32029* #
US-PATENT-CLASS-252-301.16	c 35	N79-10389* #	US-PATENT-CLASS-260-2 5	c 06	N71-11242* #	US-PATENT-CLASS-260-571	c 23	N76-15268* #
US-PATENT-CLASS-252-301 2	c 18	N71-27170* #	US-PATENT-CLASS-260-2.5	c 06	N71-24739* #	US-PATENT-CLASS-260-606-5P	c 27	N78-32256* #
US-PATENT-CLASS-252-301 4	c 06	N73-30097* #	US-PATENT-CLASS-260-2 5	c 06	N71-25929* #	US-PATENT-CLASS-260-615	c 06	N71-27254* #
US-PATENT-CLASS-252-305	c 06	N73-30097* #	US-PATENT-CLASS-260-2 5	c 18	N71-26155* #	US-PATENT-CLASS-260-615	c 06	N73-30101* #
US-PATENT-CLASS-252-359A	c 37	N77-13418* #	US-PATENT-CLASS-260-2 5	c 06	N72-25150* #	US-PATENT-CLASS-260-63N	c 27	N78-31232* #
US-PATENT-CLASS-252-364	c 28	N81-15119* #	US-PATENT-CLASS-260-2P	c 27	N78-32256* #	US-PATENT-CLASS-260-63N	c 27	N78-32261* #
US-PATENT-CLASS-252-373	c 44	N76-29704* #	US-PATENT-CLASS-260-2R	c 37	N74-18126* #	US-PATENT-CLASS-260-63R	c 27	N78-32261* #
US-PATENT-CLASS-252-373	c 44	N77-10636* #	US-PATENT-CLASS-260-2R	c 27	N74-27037* #	US-PATENT-CLASS-260-65	c 06	N73-27980* #
US-PATENT-CLASS-252-408	c 14	N73-14428* #	US-PATENT-CLASS-260-2R	c 27	N78-15276* #	US-PATENT-CLASS-260-65	c 27	N78-32261* #
US-PATENT-CLASS-252-422	c 45	N82-11634* #	US-PATENT-CLASS-260-211 5	c 06	N72-25149* #	US-PATENT-CLASS-260-65	c 23	N82-29358* #
US-PATENT-CLASS-252-431N	c 06	N73-32029* #	US-PATENT-CLASS-260-240G	c 27	N76-32315* #	US-PATENT-CLASS-260-67	c 27	N78-17214* #
US-PATENT-CLASS-252-431R	c 06	N73-32029* #	US-PATENT-CLASS-260-28 5	c 27	N73-3228* #	US-PATENT-CLASS-260-67	c 27	N79-21191* #
US-PATENT-CLASS-252-472	c 25	N78-10225* #	US-PATENT-CLASS-260-29 1R	c 24	N78-24290* #	US-PATENT-CLASS-260-72 5	c 06	N71-11236* #
US-PATENT-CLASS-252-514	c 05	N72-25120* #	US-PATENT-CLASS-260-29 6RB	c 25	N81-19242* #	US-PATENT-CLASS-260-72 5	c 06	N71-11239* #
US-PATENT-CLASS-252-514	c 44	N79-31752* #	US-PATENT-CLASS-260-29 6S	c 27	N74-17283* #	US-PATENT-CLASS-260-75NH	c 06	N71-24740* #
US-PATENT-CLASS-252-514	c 25	N82-26396* #	US-PATENT-CLASS-260-29 6	c 26	N75-27125* #	US-PATENT-CLASS-260-75NH	c 27	N78-17213* #
US-PATENT-CLASS-252-518	c 24	N79-14156* #	US-PATENT-CLASS-260-2	c 06	N71-11243* #	US-PATENT-CLASS-260-75NT	c 27	N78-17213* #
US-PATENT-CLASS-252-549	c 23	N75-14834* #	US-PATENT-CLASS-260-2	c 06	N71-20717* #	US-PATENT-CLASS-260-77 5AM	c 27	N78-17213* #
US-PATENT-CLASS-252-58	c 18	N70-39897* #	US-PATENT-CLASS-260-2	c 06	N71-20905* #	US-PATENT-CLASS-260-77 5AN	c 27	N78-17213* #
US-PATENT-CLASS-252-62 3E	c 44	N80-24741* #	US-PATENT-CLASS-260-2	c 06	N71-27363* #	US-PATENT-CLASS-260-77 5AP	c 06	N72-27144* #
US-PATENT-CLASS-252-62 3E	c 44	N81-19558* #	US-PATENT-CLASS-260-2	c 06	N73-30102* #	US-PATENT-CLASS-260-77 5AP	c 06	N73-30706* #
US-PATENT-CLASS-252-62 3GA	c 25	N75-26043* #	US-PATENT-CLASS-260-2	c 27	N79-21190* #	US-PATENT-CLASS-260-77 5AP	c 27	N77-31308* #
US-PATENT-CLASS-252-62 3	c 26	N71-23292* #	US-PATENT-CLASS-260-30 2	c 06	N73-27980* #	US-PATENT-CLASS-260-77 5AP	c 27	N78-17213* #
US-PATENT-CLASS-252-62 3	c 76	N76-25049* #	US-PATENT-CLASS-260-30 4N	c 27	N78-17205* #	US-PATENT-CLASS-260-77 5AT	c 27	N78-17213* #
US-PATENT-CLASS-252-62	c 27	N74-27037* #	US-PATENT-CLASS-260-30 BDS	c 06	N73-27980* #	US-PATENT-CLASS-260-77 55P	c 27	N78-17213* #
US-PATENT-CLASS-252-70	c 23	N75-14834* #	US-PATENT-CLASS-260-307G	c 27	N79-22300* #	US-PATENT-CLASS-260-77 5	c 06	N73-30099* #
US-PATENT-CLASS-252-8 1	c 18	N73-26572* #	US-PATENT-CLASS-260-32 2R	c 27	N78-17205* #	US-PATENT-CLASS-260-77 5	c 06	N73-30100* #
US-PATENT-CLASS-252-8 1	c 27	N74-27037* #	US-PATENT-CLASS-260-32 6NT	c 27	N78-17205* #	US-PATENT-CLASS-260-77 5	c 06	N73-30103* #
US-PATENT-CLASS-252-8 1	c 24	N78-14096* #	US-PATENT-CLASS-260-32 6N	c 06	N73-27980* #	US-PATENT-CLASS-260-78 41	c 27	N78-17213* #
US-PATENT-CLASS-253-317	c 44	N77-22606* #	US-PATENT-CLASS-260-32 6N	c 23	N76-15268* #	US-PATENT-CLASS-260-78TF	c 06	N73-27980* #
US-PATENT-CLASS-253-39 15	c 15	N70-33226* #	US-PATENT-CLASS-260-32 8N	c 23	N76-15268* #	US-PATENT-CLASS-260-78TF	c 27	N74-23125* #
US-PATENT-CLASS-253-39 15	c 15	N70-33264* #	US-PATENT-CLASS-260-326N	c 27	N81-17260* #	US-PATENT-CLASS-260-78TF	c 23	N75-30256* #
US-PATENT-CLASS-253-39 15	c 28	N70-33372* #	US-PATENT-CLASS-260-326S	c 27	N81-17260* #	US-PATENT-CLASS-260-78TF	c 23	N76-15268* #
US-PATENT-CLASS-253-39 1	c 33	N71-29152* #	US-PATENT-CLASS-260-33 4R	c 06	N73-27980* #	US-PATENT-CLASS-260-78TF	c 27	N78-32261* #
US-PATENT-CLASS-253-66	c 15	N70-36412* #	US-PATENT-CLASS-260-33 4R	c 27	N78-17205* #	US-PATENT-CLASS-260-78UA	c 06	N73-27980* #
US-PATENT-CLASS-253-66	c 28	N70-39895* #	US-PATENT-CLASS-260-33 4R	c 27	N81-19296* #	US-PATENT-CLASS-260-78	c 06	N71-11235* #
US-PATENT-CLASS-253-77	c 28	N71-28928* #	US-PATENT-CLASS-260-33 6EP	c 24	N78-27180* #	US-PATENT-CLASS-260-78	c 06	N71-11238* #
US-PATENT-CLASS-253-77	c 28	N71-29154* #	US-PATENT-CLASS-260-33 6PQ	c 24	N78-27180* #	US-PATENT-CLASS-260-830S	c 15	N79-26100* #
US-PATENT-CLASS-253	c 25	N79-28253* #	US-PATENT-CLASS-260-33 6R	c 06	N73-27980* #	US-PATENT-CLASS-260-85 5	c 06	N71-23500* #
US-PATENT-CLASS-254-124	c 20	N76-22296* #	US-PATENT-CLASS-260-33 6UB	c 27	N81-15104* #	US-PATENT-CLASS-260-858	c 27	N81-14076* #
US-PATENT-CLASS-254-131	c 60	N82-24839* #	US-PATENT-CLASS-260-33 6EP	c 24	N78-27180* #	US-PATENT-CLASS-260-877	c 06	N72-22107* #
US-PATENT-CLASS-254-150	c 15	N71-24599* #	US-PATENT-CLASS-260-33 8F	c 27	N76-24405* #	US-PATENT-CLASS-260-879	c 27	N76-16228* #
US-PATENT-CLASS-254-156	c 15	N73-25512* #	US-PATENT-CLASS-260-33 8F	c 25	N81-14016* #	US-PATENT-CLASS-260-886	c 27	N81-14076* #
US-PATENT-CLASS-254-158	c 54	N77-21844* #	US-PATENT-CLASS-260-33 8UA	c 24	N78-27180* #	US-PATENT-CLASS-260-8900	c 27	N81-14076* #
US-PATENT-CLASS-254-173	c 15	N71-24599* #	US-PATENT-CLASS-260-340 9R	c 23	N82-16174* #	US-PATENT-CLASS-260-895	c 27	N81-14076* #
US-PATENT-CLASS-254-186	c 15	N71-24599* #	US-PATENT-CLASS-260-346 3	c 23	N75-30256* #	US-PATENT-CLASS-260-898	c 27	N81-14076* #
US-PATENT-CLASS-254-190	c 15	N72-25453* #	US-PATENT-CLASS-260-346 3	c 23	N76-15268* #	US-PATENT-CLASS-260-900	c 27	N76-16228* #
US-PATENT-CLASS-254-29A	c 15	N73-30457* #	US-PATENT-CLASS-260-346 3	c 27	N80-32515* #	US-PATENT-CLASS-260-901	c 27	N81-14076* #
US-PATENT-CLASS-254-93R	c 35	N74-13129* #	US-PATENT-CLASS-260-348SC	c 06	N72-25148* #	US-PATENT-CLASS-260-92 1	c 06	N72-25150* #
US-PATENT-CLASS-254-93R	c 20	N78-22296* #	US-PATENT-CLASS-260-37EP	c 24	N78-24290* #	US-PATENT-CLASS-260-92 1	c 06	N72-25152* #
US-PATENT-CLASS-256-13 1	c 37	N79-10420* #	US-PATENT-CLASS-260-37EP	c 24	N78-27180* #	US-PATENT-CLASS-260-92 1	c 27	N76-16228* #
US-PATENT-CLASS-256-1	c 37	N79-10420* #	US-PATENT-CLASS-260-37EP	c 15	N79-26100* #	US-PATENT-CLASS-260-92 1	c 27	N76-24405* #
US-PATENT-CLASS-259-DIG 18	c 35	N74-15093* #	US-PATENT-CLASS-260-37EP	c 27	N81-17260* #	US-PATENT-CLASS-260-926	c 06	N80-10358* #
US-PATENT-CLASS-259-4AC	c 37	N76-19436* #	US-PATENT-CLASS-260-37N	c 27	N79-28307* #	US-PATENT-CLASS-260-93.5A	c 27	N73-32029* #
US-PATENT-CLASS-259-4	c 15	N73-19458* #	US-PATENT-CLASS-260-37	c 18	N71-25881* #	US-PATENT-CLASS-260-93 5S	c 06	N73-32029* #
US-PATENT-CLASS-259-60	c 35	N74-15093* #	US-PATENT-CLASS-260-37	c 27	N81-24258* #	US-PATENT-CLASS-260-94 2M	c 06	N73-32029* #
US-PATENT-CLASS-259-71	c 15	N71-21177* #	US-PATENT-CLASS-260-386	c 25	N82-24312* #	US-PATENT-CLASS-260-94 7R	c 06	N73-32029* #
US-PATENT-CLASS-259-72	c 37	N74-18123* #	US-PATENT-CLASS-260-389	c 25	N82-24312* #	US-PATENT-CLASS-260-94 8	c 27	N73-22710* #
US-PATENT-CLASS-259-98	c 35	N74-15126* #	US-PATENT-CLASS-260-396N	c 27	N74-27037* #	US-PATENT-CLASS-260-959	c 27	N78-32256* #
US-PATENT-CLASS-259-74R	c 34	N77-24423* #	US-PATENT-CLASS-260-404 5	c 18	N71-15688* #	US-PATENT-CLASS-260-96D	c 28	



US-PATENT-CLASS-261-123	c 34	N77-24423* #	US-PATENT-CLASS-264-66	c 27	N76-22376* #	US-PATENT-CLASS-285-226	c 37	N75-19686* #
US-PATENT-CLASS-261-145	c 28	N72-22772* #	US-PATENT-CLASS-264-70	c 44	N79-24432* #	US-PATENT-CLASS-285-226	c 37	N76-14460* #
US-PATENT-CLASS-261-28	c 07	N81-29129* #	US-PATENT-CLASS-264-71	c 44	N79-24432* #	US-PATENT-CLASS-285-235	c 54	N78-31735* #
US-PATENT-CLASS-261-79A	c 54	N81-24724* #	US-PATENT-CLASS-264-90	c 24	N76-17150* #	US-PATENT-CLASS-285-235	c 54	N79-24651* #
US-PATENT-CLASS-263-48	c 15	N69-27483* #	US-PATENT-CLASS-264-92	c 15	N71-17803* #	US-PATENT-CLASS-285-24	c 15	N71-10782* #
US-PATENT-CLASS-264-DIG 36	c 18	N73-14584* #	US-PATENT-CLASS-264-92	c 15	N72-24522* #	US-PATENT-CLASS-285-265	c 37	N76-14460* #
US-PATENT-CLASS-264-DIG 44	c 15	N72-16329* #	US-PATENT-CLASS-264-99	c 31	N81-33319* #	US-PATENT-CLASS-285-27	c 15	N70-41808* #
US-PATENT-CLASS-264-102	c 15	N71-10672* #	US-PATENT-CLASS-266-119	c 26	N80-28492* #	US-PATENT-CLASS-285-314	c 15	N71-24903* #
US-PATENT-CLASS-264-102	c 15	N73-12489* #	US-PATENT-CLASS-266-19	c 15	N70-33382* #	US-PATENT-CLASS-285-316	c 15	N72-25450* #
US-PATENT-CLASS-264-102	c 31	N74-14133* #	US-PATENT-CLASS-266-249	c 26	N80-28492* #	US-PATENT-CLASS-285-316	c 33	N72-20445* #
US-PATENT-CLASS-264-102	c 31	N74-18124* #	US-PATENT-CLASS-266-274	c 26	N80-28492* #	US-PATENT-CLASS-285-317	c 15	N71-24903* #
US-PATENT-CLASS-264-102	c 37	N76-24575* #	US-PATENT-CLASS-267-166	c 34	N74-18552* #	US-PATENT-CLASS-285-326	c 37	N79-11402* #
US-PATENT-CLASS-264-102	c 15	N79-26100* #	US-PATENT-CLASS-267-1	c 15	N69-27504* #	US-PATENT-CLASS-285-331	c 15	N70-41629* #
US-PATENT-CLASS-264-104	c 05	N72-25120* #	US-PATENT-CLASS-267-1	c 15	N70-38225* #	US-PATENT-CLASS-285-331	c 15	N72-25450* #
US-PATENT-CLASS-264-104	c 27	N81-24257* #	US-PATENT-CLASS-267-64	c 15	N71-21530* #	US-PATENT-CLASS-285-345	c 15	N72-20445* #
US-PATENT-CLASS-264-104	c 23	N81-29160* #	US-PATENT-CLASS-269-153	c 44	N79-19447* #	US-PATENT-CLASS-285-359	c 37	N79-11402* #
US-PATENT-CLASS-264-105	c 27	N81-24257* #	US-PATENT-CLASS-269-156	c 37	N80-14398* #	US-PATENT-CLASS-285-37	c 37	N82-24490* #
US-PATENT-CLASS-264-111	c 17	N71-29137* #	US-PATENT-CLASS-269-21	c 37	N76-21554* #	US-PATENT-CLASS-285-38	c 15	N71-24903* #
US-PATENT-CLASS-264-118	c 24	N80-26388* #	US-PATENT-CLASS-269-21	c 37	N78-17383* #	US-PATENT-CLASS-285-3	c 15	N69-27490* #
US-PATENT-CLASS-264-119	c 24	N80-26388* #	US-PATENT-CLASS-269-21	c 37	N78-27423* #	US-PATENT-CLASS-285-3	c 15	N72-25450* #
US-PATENT-CLASS-264-124	c 24	N80-26388* #	US-PATENT-CLASS-269-21	c 76	N80-18951* #	US-PATENT-CLASS-285-401	c 37	N82-24494* #
US-PATENT-CLASS-264-129	c 37	N76-31524* #	US-PATENT-CLASS-269-21	c 37	N81-33482* #	US-PATENT-CLASS-285-406	c 15	N71-24903* #
US-PATENT-CLASS-264-130	c 27	N78-32262* #	US-PATENT-CLASS-269-266	c 37	N78-27423* #	US-PATENT-CLASS-285-410	c 05	N72-11085* #
US-PATENT-CLASS-264-135	c 37	N74-18126* #	US-PATENT-CLASS-269-287	c 37	N80-23655* #	US-PATENT-CLASS-285-45	c 15	N71-28937* #
US-PATENT-CLASS-264-136	c 37	N74-18126* #	US-PATENT-CLASS-269-48 1	c 39	N74-13131* #	US-PATENT-CLASS-285-89	c 37	N82-24494* #
US-PATENT-CLASS-264-137	c 27	N79-33316* #	US-PATENT-CLASS-272-498	c 15	N73-28515* #	US-PATENT-CLASS-287-119	c 15	N70-41829* #
US-PATENT-CLASS-264-137	c 27	N81-14078* #	US-PATENT-CLASS-272-DIG 1	c 05	N73-32014* #	US-PATENT-CLASS-287-189 365	c 15	N71-26312* #
US-PATENT-CLASS-264-137	c 27	N81-29229* #	US-PATENT-CLASS-272-DIG 4	c 05	N73-32014* #	US-PATENT-CLASS-287-189 36	c 15	N71-10799* #
US-PATENT-CLASS-264-145	c 15	N79-26100* #	US-PATENT-CLASS-272-DIG 5	c 05	N73-32014* #	US-PATENT-CLASS-287-54A	c 11	N72-25287* #
US-PATENT-CLASS-264-151	c 15	N79-26100* #	US-PATENT-CLASS-272-1R	c 09	N75-15662* #	US-PATENT-CLASS-287-85R	c 15	N73-12488* #
US-PATENT-CLASS-264-157	c 24	N78-17150* #	US-PATENT-CLASS-272-57A	c 09	N75-15662* #	US-PATENT-CLASS-287-92	c 31	N73-32749* #
US-PATENT-CLASS-264-161	c 37	N76-31524* #	US-PATENT-CLASS-272-70	c 05	N71-28619* #	US-PATENT-CLASS-29-DIG 1	c 44	N81-14389* #
US-PATENT-CLASS-264-175	c 15	N79-26100* #	US-PATENT-CLASS-272-73	c 14	N73-27377* #	US-PATENT-CLASS-29-DIG 24	c 24	N75-33181* #
US-PATENT-CLASS-264-184	c 27	N78-32262* #	US-PATENT-CLASS-272-73	c 05	N73-27941* #	US-PATENT-CLASS-29-DIG 35	c 37	N77-23482* #
US-PATENT-CLASS-264-1	c 44	N79-24432* #	US-PATENT-CLASS-272-73	c 37	N74-18127* #	US-PATENT-CLASS-29-DIG 39	c 34	N75-33181* #
US-PATENT-CLASS-264-211	c 27	N78-32262* #	US-PATENT-CLASS-272-79C	c 05	N73-32014* #	US-PATENT-CLASS-29-125	c 27	N79-10422* #
US-PATENT-CLASS-264-212	c 27	N80-32516* #	US-PATENT-CLASS-272-80	c 37	N74-18127* #	US-PATENT-CLASS-29-148 4A	c 37	N74-15128* #
US-PATENT-CLASS-264-216	c 25	N82-21268* #	US-PATENT-CLASS-273-1E	c 05	N73-13114* #	US-PATENT-CLASS-29-148 4B	c 37	N74-15128* #
US-PATENT-CLASS-264-217	c 25	N75-12087* #	US-PATENT-CLASS-274-4R	c 09	N72-11224* #	US-PATENT-CLASS-29-148 4	c 15	N71-16052* #
US-PATENT-CLASS-264-219	c 37	N76-31524* #	US-PATENT-CLASS-277-105	c 37	N82-24490* #	US-PATENT-CLASS-29-148 4	c 15	N71-17688* #
US-PATENT-CLASS-264-220	c 27	N82-28440* #	US-PATENT-CLASS-277-134	c 37	N75-21631* #	US-PATENT-CLASS-29-155 55	c 15	N71-15986* #
US-PATENT-CLASS-264-221	c 15	N72-16329* #	US-PATENT-CLASS-277-134	c 07	N78-25090* #	US-PATENT-CLASS-29-156 8R	c 37	N78-24544* #
US-PATENT-CLASS-264-225	c 15	N72-16329* #	US-PATENT-CLASS-277-13	c 15	N71-26294* #	US-PATENT-CLASS-29-157 3R	c 34	N74-18552* #
US-PATENT-CLASS-264-227	c 15	N72-16329* #	US-PATENT-CLASS-277-153	c 37	N80-28711* #	US-PATENT-CLASS-29-157 3	c 28	N70-41818* #
US-PATENT-CLASS-264-229	c 24	N81-29163* #	US-PATENT-CLASS-277-153	c 37	N81-26447* #	US-PATENT-CLASS-29-157	c 28	N71-15658* #
US-PATENT-CLASS-264-22	c 15	N72-20446* #	US-PATENT-CLASS-277-181	c 37	N81-15363* #	US-PATENT-CLASS-29-182 1	c 18	N71-23710* #
US-PATENT-CLASS-264-22	c 14	N72-22439* #	US-PATENT-CLASS-277-189	c 37	N82-16408* #	US-PATENT-CLASS-29-182 2	c 17	N71-23046* #
US-PATENT-CLASS-264-22	c 25	N75-12087* #	US-PATENT-CLASS-277-192	c 37	N79-22474* #	US-PATENT-CLASS-29-182 2	c 37	N75-26371* #
US-PATENT-CLASS-264-22	c 27	N80-32516* #	US-PATENT-CLASS-277-193	c 37	N80-28711* #	US-PATENT-CLASS-29-182 5	c 17	N72-28536* #
US-PATENT-CLASS-264-22	c 27	N82-28440* #	US-PATENT-CLASS-277-193	c 37	N81-26447* #	US-PATENT-CLASS-29-182 5	c 37	N75-26371* #
US-PATENT-CLASS-264-230	c 37	N82-24491* #	US-PATENT-CLASS-277-1	c 37	N82-24490* #	US-PATENT-CLASS-29-182 5	c 27	N76-15311* #
US-PATENT-CLASS-264-231	c 24	N81-29163* #	US-PATENT-CLASS-277-204	c 37	N82-24490* #	US-PATENT-CLASS-29-182 5	c 27	N77-13217* #
US-PATENT-CLASS-264-236	c 27	N78-32262* #	US-PATENT-CLASS-277-224	c 37	N80-28711* #	US-PATENT-CLASS-29-182	c 37	N74-13179* #
US-PATENT-CLASS-264-236	c 15	N79-26100* #	US-PATENT-CLASS-277-229	c 37	N81-15363* #	US-PATENT-CLASS-29-182	c 34	N76-27515* #
US-PATENT-CLASS-264-23	c 71	N78-10837* #	US-PATENT-CLASS-277-25	c 15	N69-21362* #	US-PATENT-CLASS-29-183 5	c 17	N70-38490* #
US-PATENT-CLASS-264-23	c 31	N81-15154* #	US-PATENT-CLASS-277-25	c 15	N71-19570* #	US-PATENT-CLASS-29-193	c 34	N76-27515* #
US-PATENT-CLASS-264-24	c 31	N81-33319* #	US-PATENT-CLASS-277-25	c 15	N72-29488* #	US-PATENT-CLASS-29-194	c 26	N75-19408* #
US-PATENT-CLASS-264-257	c 37	N74-18126* #	US-PATENT-CLASS-277-25	c 37	N74-10474* #	US-PATENT-CLASS-29-194	c 44	N76-14595* #
US-PATENT-CLASS-264-258	c 24	N81-29163* #	US-PATENT-CLASS-277-25	c 07	N78-25090* #	US-PATENT-CLASS-29-195A	c 27	N76-16229* #
US-PATENT-CLASS-264-259	c 24	N81-29163* #	US-PATENT-CLASS-277-27	c 15	N72-29488* #	US-PATENT-CLASS-29-195Y	c 14	N73-32320* #
US-PATENT-CLASS-264-267	c 37	N76-24575* #	US-PATENT-CLASS-277-27	c 37	N74-10474* #	US-PATENT-CLASS-29-195	c 44	N76-14595* #
US-PATENT-CLASS-264-27	c 26	N71-17818* #	US-PATENT-CLASS-277-27	c 37	N74-15125* #	US-PATENT-CLASS-29-196 2	c 17	N73-32414* #
US-PATENT-CLASS-264-28	c 15	N73-12489* #	US-PATENT-CLASS-277-27	c 37	N75-21631* #	US-PATENT-CLASS-29-196 2	c 26	N75-19408* #
US-PATENT-CLASS-264-294	c 31	N74-13177* #	US-PATENT-CLASS-277-27	c 37	N82-12442* #	US-PATENT-CLASS-29-196 6	c 17	N73-32414* #
US-PATENT-CLASS-264-3R	c 28	N77-10213* #	US-PATENT-CLASS-277-2	c 37	N82-24490* #	US-PATENT-CLASS-29-196 6	c 37	N75-13261* #
US-PATENT-CLASS-264-3R	c 20	N77-17143* #	US-PATENT-CLASS-277-40	c 37	N75-21631* #	US-PATENT-CLASS-29-196 6	c 26	N75-19408* #
US-PATENT-CLASS-264-304	c 37	N76-31524* #	US-PATENT-CLASS-277-40	c 37	N82-12442* #	US-PATENT-CLASS-29-197	c 17	N73-32414* #
US-PATENT-CLASS-264-305	c 37	N76-31524* #	US-PATENT-CLASS-277-41	c 37	N76-22541* #	US-PATENT-CLASS-29-197	c 37	N75-13261* #
US-PATENT-CLASS-264-308	c 37	N76-31524* #	US-PATENT-CLASS-277-4	c 37	N76-22541* #	US-PATENT-CLASS-29-197	c 26	N75-19408* #
US-PATENT-CLASS-264-310	c 37	N76-31524* #	US-PATENT-CLASS-277-4	c 37	N82-24490* #	US-PATENT-CLASS-29-197	c 44	N76-14595* #
US-PATENT-CLASS-264-311	c 24	N81-29163* #	US-PATENT-CLASS-277-59	c 37	N82-24490* #	US-PATENT-CLASS-29-198	c 17	N70-33288* #
US-PATENT-CLASS-264-318	c 37	N76-31524* #	US-PATENT-CLASS-277-62	c 37	N79-22475* #	US-PATENT-CLASS-29-198	c 09	N72-25259* #
US-PATENT-CLASS-264-331	c 27	N76-16230* #	US-PATENT-CLASS-277-72R	c 37	N82-24490* #	US-PATENT-CLASS-29-203H	c 37	N74-32918* #
US-PATENT-CLASS-264-332	c 37	N81-25371* #	US-PATENT-CLASS-277-74	c 15	N72-29488* #	US-PATENT-CLASS-29-203MW	c 33	N74-26977* #
US-PATENT-CLASS-264-334	c 37	N76-31524* #	US-PATENT-CLASS-277-74	c 37	N76-22541* #	US-PATENT-CLASS-29-203V	c 15	N73-14468* #
US-PATENT-CLASS-264-33	c 44	N79-24432* #	US-PATENT-CLASS-277-81R	c 37	N82-16408* #	US-PATENT-CLASS-29-23 5	c 37	N78-24544* #
US-PATENT-CLASS-264-342R	c 37	N82-24491* #	US-PATENT-CLASS-277-93R	c 37	N74-15125* #	US-PATENT-CLASS-29-234	c 15	N70-36901* #
US-PATENT-CLASS-264-345	c 71	N78-10837* #	US-PATENT-CLASS-277-93R	c 37	N76-22541* #	US-PATENT-CLASS-29-244	c 37	N78-24544* #
US-PATENT-CLASS-264-34	c 44	N79-24432* #	US-PATENT-CLASS-277-96 1	c 37	N82-12442* #	US-PATENT-CLASS-29-25 14	c 05	N72-25121* #
US-PATENT-CLASS-264-35	c 44	N79-24432* #	US-PATENT-CLASS-277-96 1	c 37	N79-22475* #	US-PATENT-CLASS-29-25 14	c 35	N82-24471* #
US-PATENT-CLASS-264-36	c 15	N73-12489* #	US-PATENT-CLASS-277-96	c 37	N74-10474* #	US-PATENT-CLASS-29-25 18	c 09	N71-26678* #
US-PATENT-CLASS-264-36	c 32	N74-27612* #	US-PATENT-CLASS-279-96	c 37	N81-24442* #	US-PATENT-CLASS-29-25 18	c 05	N72-25121* #
US-PATENT-CLASS-264-3	c 28	N71-26779* #	US-PATENT-CLASS-279-1B	c 37	N75-33395* #	US-PATENT-CLASS-29-25 18	c 20	N75-18310* #
US-PATENT-CLASS-264-40 4	c 35	N80-18357* #	US-PATENT-CLASS-279-107	c 37	N75-33395* #	US-PATENT-CLASS-29-25 18	c 20	N76-1276* #
US-PATENT-CLASS-264-40	c 15	N73-12489* #	US-PATENT-CLASS-279-3	c 37	N78-17383* #	US-PATENT-CLASS-29-25 35	c 35	N80-20559* #
US-PATENT-CLASS-264-41	c 25	N81-19244* #	US-PATENT-CLASS-279-89	c 37	N75-33395* #	US-PATENT-CLASS-29-25 42	c 26	N72-28762* #
US-PATENT-CLASS-264-453	c 25	N82-21268* #	US-PATENT-CLASS-280-150SB	c 05	N75-25915* #	US-PATENT-CLASS-29-252	c 37	N78-24544* #
US-PATENT-CLASS-264-510	c 44	N79-24432* #	US-PATENT-CLASS-280-432	c 37	N77-14477* #	US-PATENT-CLASS-29-26A	c 37	N75-33395* #
US-PATENT-CLASS-264-516	c 44	N79-24432* #	US-PATENT-CLASS-280-805	c 37	N82-18601* #	US-PATENT-CLASS-29-267	c 60	N82-24839* #
US-PATENT-CLASS-264-53	c 25	N82-21268* #	US-PATENT-CLASS-285-DIG 21	c 15	N72-25450* #	US-PATENT-CLASS-29-268	c 37	N74-32918* #
US-PATENT-CLASS-264-5	c 31	N81-33319* #	US-PATENT-CLASS-285-DIG.21	c 33	N73-26958* #	US-PATENT-CLASS-29-271	c 15	N70-41371* #
US-PATENT-CLASS-264-5	c 27	N82-28442* #	US-PATENT-CLASS-285-114	c 37	N75-19686* #	US-PATENT-CLASS-29-278R	c 15	N71-29133* #
US-PATENT-CLASS-264-60	c 27	N76-22376* #	US-PATENT-CLASS-285-159	c 37	N82-24494* #	US-PATENT-CLASS-29-400	c 05	N71-12345* #
US-PATENT-CLASS-264-60	c 27	N79-1213* #	US-PATENT-CLASS-285-18	c 15	N72-204			



US-PATENT-CLASS-29-420 5	c 37	N74-13179* #	US-PATENT-CLASS-29-578	c 33	N78-27326* #	US-PATENT-CLASS-3-12	c 05	N73-32013* #
US-PATENT-CLASS-29-420 5	c 37	N75-26371* #	US-PATENT-CLASS-29-578	c 44	N79-18444* #	US-PATENT-CLASS-3-12	c 52	N79-26772* #
US-PATENT-CLASS-29-420	c 24	N75-13032* #	US-PATENT-CLASS-29-578	c 44	N79-26475* #	US-PATENT-CLASS-3-14	c 52	N77-14735* #
US-PATENT-CLASS-29-421E	c 37	N79-13364* #	US-PATENT-CLASS-29-578	c 33	N81-26360* #	US-PATENT-CLASS-3-15	c 52	N78-10686* #
US-PATENT-CLASS-29-421	c 15	N71-29018* #	US-PATENT-CLASS-29-580	c 09	N73-27150* #	US-PATENT-CLASS-3-1	c 52	N77-25772* #
US-PATENT-CLASS-29-421	c 14	N72-22439* #	US-PATENT-CLASS-29-580	c 44	N79-26475* #	US-PATENT-CLASS-3-21	c 54	N77-30749* #
US-PATENT-CLASS-29-421	c 37	N78-14461* #	US-PATENT-CLASS-29-580	c 33	N81-26360* #	US-PATENT-CLASS-3-29	c 52	N78-10686* #
US-PATENT-CLASS-29-423	c 15	N70-36409* #	US-PATENT-CLASS-29-580	c 14	N71-27334* #	US-PATENT-CLASS-3-2	c 05	N73-32013* #
US-PATENT-CLASS-29-423	c 31	N74-21059* #	US-PATENT-CLASS-29-588	c 14	N72-31446* #	US-PATENT-CLASS-3-2	c 54	N77-30749* #
US-PATENT-CLASS-29-426	c 15	N72-20444* #	US-PATENT-CLASS-29-588	c 14	N74-14784* #	US-PATENT-CLASS-3-6	c 52	N79-26772* #
US-PATENT-CLASS-29-428	c 15	N71-17686* #	US-PATENT-CLASS-29-588	c 44	N80-14474* #	US-PATENT-CLASS-30-102	c 05	N73-32013* #
US-PATENT-CLASS-29-432	c 37	N78-19437* #	US-PATENT-CLASS-29-588	c 26	N72-17820* #	US-PATENT-CLASS-30-102	c 37	N82-26672* #
US-PATENT-CLASS-29-433	c 37	N78-19437* #	US-PATENT-CLASS-29-589	c 09	N72-25261* #	US-PATENT-CLASS-30-228	c 15	N70-42017* #
US-PATENT-CLASS-29-447	c 37	N77-23482* #	US-PATENT-CLASS-29-589	c 15	N73-14469* #	US-PATENT-CLASS-30-90 6	c 37	N79-10419* #
US-PATENT-CLASS-29-452	c 15	N73-30457* #	US-PATENT-CLASS-29-589	c 44	N79-31752* #	US-PATENT-CLASS-301-5P	c 37	N74-18125* #
US-PATENT-CLASS-29-460	c 37	N74-11301* #	US-PATENT-CLASS-29-589	c 09	N72-22199* #	US-PATENT-CLASS-301-82	c 33	N79-10339* #
US-PATENT-CLASS-29-460	c 37	N75-13261* #	US-PATENT-CLASS-29-590	c 15	N73-14469* #	US-PATENT-CLASS-302-66	c 25	N79-11152* #
US-PATENT-CLASS-29-463	c 07	N78-33101* #	US-PATENT-CLASS-29-591	c 15	N73-14469* #	US-PATENT-CLASS-303-92	c 44	N79-14527* #
US-PATENT-CLASS-29-467	c 39	N78-31562* #	US-PATENT-CLASS-29-591	c 44	N79-18444* #	US-PATENT-CLASS-305-35B	c 11	N73-26238* #
US-PATENT-CLASS-29-470 1	c 37	N74-21057* #	US-PATENT-CLASS-29-592	c 35	N75-13213* #	US-PATENT-CLASS-305-39	c 11	N73-26238* #
US-PATENT-CLASS-29-470 1	c 37	N75-12326* #	US-PATENT-CLASS-29-597	c 33	N77-26385* #	US-PATENT-CLASS-307-103	c 09	N72-25262* #
US-PATENT-CLASS-29-472 7	c 37	N75-15992* #	US-PATENT-CLASS-29-599	c 15	N72-25447* #	US-PATENT-CLASS-307-104	c 09	N71-24892* #
US-PATENT-CLASS-29-472 9	c 15	N69-39786* #	US-PATENT-CLASS-29-599	c 26	N73-26752* #	US-PATENT-CLASS-307-106	c 09	N69-21468* #
US-PATENT-CLASS-29-472 9	c 26	N71-16037* #	US-PATENT-CLASS-29-599	c 26	N73-25271* #	US-PATENT-CLASS-307-118	c 09	N72-27227* #
US-PATENT-CLASS-29-472 9	c 15	N72-22492* #	US-PATENT-CLASS-29-603	c 08	N71-27210* #	US-PATENT-CLASS-307-119	c 33	N79-28415* #
US-PATENT-CLASS-29-473 1	c 15	N72-22487* #	US-PATENT-CLASS-29-604	c 24	N75-13032* #	US-PATENT-CLASS-307-126	c 14	N71-27407* #
US-PATENT-CLASS-29-473 1	c 15	N72-22492* #	US-PATENT-CLASS-29-610	c 24	N75-30260* #	US-PATENT-CLASS-307-127	c 33	N74-14956* #
US-PATENT-CLASS-29-473 1	c 37	N75-15992* #	US-PATENT-CLASS-29-613	c 24	N75-30260* #	US-PATENT-CLASS-307-136	c 09	N69-27500* #
US-PATENT-CLASS-29-475	c 37	N75-12326* #	US-PATENT-CLASS-29-613	c 35	N82-24470* #	US-PATENT-CLASS-307-141 8	c 03	N72-25020* #
US-PATENT-CLASS-29-482	c 05	N72-25121* #	US-PATENT-CLASS-29-620	c 35	N82-31659* #	US-PATENT-CLASS-307-149	c 09	N71-13486* #
US-PATENT-CLASS-29-482	c 37	N74-18128* #	US-PATENT-CLASS-29-622	c 33	N77-26385* #	US-PATENT-CLASS-307-149	c 54	N75-12616* #
US-PATENT-CLASS-29-487	c 15	N73-33383* #	US-PATENT-CLASS-29-624	c 15	N72-20444* #	US-PATENT-CLASS-307-151	c 32	N78-24391* #
US-PATENT-CLASS-29-487	c 37	N74-21055* #	US-PATENT-CLASS-29-624	c 14	N73-13417* #	US-PATENT-CLASS-307-157	c 16	N73-32391* #
US-PATENT-CLASS-29-488	c 15	N70-33311* #	US-PATENT-CLASS-29-627	c 44	N80-14474* #	US-PATENT-CLASS-307-18	c 03	N73-31988* #
US-PATENT-CLASS-29-488	c 37	N74-18128* #	US-PATENT-CLASS-29-628	c 15	N72-22491* #	US-PATENT-CLASS-307-18	c 33	N74-34638* #
US-PATENT-CLASS-29-492	c 15	N71-20443* #	US-PATENT-CLASS-29-628	c 09	N72-25261* #	US-PATENT-CLASS-307-204	c 35	N75-30504* #
US-PATENT-CLASS-29-492	c 09	N72-25261* #	US-PATENT-CLASS-29-628	c 09	N73-28083* #	US-PATENT-CLASS-307-205	c 33	N75-14957* #
US-PATENT-CLASS-29-494	c 15	N73-33383* #	US-PATENT-CLASS-29-628	c 33	N77-26385* #	US-PATENT-CLASS-307-206	c 10	N72-22236* #
US-PATENT-CLASS-29-494	c 37	N74-21055* #	US-PATENT-CLASS-29-628	c 44	N78-25528* #	US-PATENT-CLASS-307-207	c 08	N71-29034* #
US-PATENT-CLASS-29-494	c 37	N75-13261* #	US-PATENT-CLASS-29-629	c 09	N73-28083* #	US-PATENT-CLASS-307-207	c 09	N73-13209* #
US-PATENT-CLASS-29-495	c 15	N71-21078* #	US-PATENT-CLASS-29-630A	c 05	N72-25121* #	US-PATENT-CLASS-307-208	c 33	N75-14957* #
US-PATENT-CLASS-29-497 5	c 15	N73-28515* #	US-PATENT-CLASS-29-630A	c 09	N73-28083* #	US-PATENT-CLASS-307-211	c 35	N75-30504* #
US-PATENT-CLASS-29-497 5	c 15	N73-33383* #	US-PATENT-CLASS-29-630E	c 33	N77-26385* #	US-PATENT-CLASS-307-215	c 10	N71-28860* #
US-PATENT-CLASS-29-497 5	c 37	N74-11300* #	US-PATENT-CLASS-29-630	c 09	N73-28083* #	US-PATENT-CLASS-307-215	c 09	N71-29139* #
US-PATENT-CLASS-29-497 5	c 37	N75-13261* #	US-PATENT-CLASS-29-739	c 44	N79-24431* #	US-PATENT-CLASS-307-215	c 10	N72-22236* #
US-PATENT-CLASS-29-497	c 09	N72-25261* #	US-PATENT-CLASS-29-764	c 60	N82-24839* #	US-PATENT-CLASS-307-215	c 09	N73-13209* #
US-PATENT-CLASS-29-497	c 15	N73-32358* #	US-PATENT-CLASS-29-809	c 44	N79-24431* #	US-PATENT-CLASS-307-215	c 33	N74-22814* #
US-PATENT-CLASS-29-497	c 37	N74-18128* #	US-PATENT-CLASS-29-81C	c 75	N78-27913* #	US-PATENT-CLASS-307-216	c 08	N71-18751* #
US-PATENT-CLASS-29-498	c 09	N72-25261* #	US-PATENT-CLASS-29-81D	c 37	N76-18454* #	US-PATENT-CLASS-307-219	c 35	N75-30504* #
US-PATENT-CLASS-29-498	c 15	N73-33383* #	US-PATENT-CLASS-29-832	c 44	N81-14389* #	US-PATENT-CLASS-307-219	c 60	N81-15706* #
US-PATENT-CLASS-29-498	c 37	N74-11301* #	US-PATENT-CLASS-290-40	c 03	N71-11057* #	US-PATENT-CLASS-307-220	c 10	N73-26229* #
US-PATENT-CLASS-29-498	c 37	N74-18128* #	US-PATENT-CLASS-290-52	c 37	N77-32500* #	US-PATENT-CLASS-307-221R	c 10	N73-20254* #
US-PATENT-CLASS-29-498	c 37	N74-21055* #	US-PATENT-CLASS-290-52	c 37	N77-32501* #	US-PATENT-CLASS-307-221R	c 33	N78-14373* #
US-PATENT-CLASS-29-502	c 09	N72-25261* #	US-PATENT-CLASS-290-53	c 44	N80-29834* #	US-PATENT-CLASS-307-222	c 09	N69-27463* #
US-PATENT-CLASS-29-503	c 37	N74-11301* #	US-PATENT-CLASS-292-DIG 14	c 37	N75-19685* #	US-PATENT-CLASS-307-222	c 08	N71-29034* #
US-PATENT-CLASS-29-504	c 37	N74-21055* #	US-PATENT-CLASS-292-108	c 37	N75-19685* #	US-PATENT-CLASS-307-223B	c 09	N72-22201* #
US-PATENT-CLASS-29-504	c 37	N75-13261* #	US-PATENT-CLASS-292-110	c 37	N77-32499* #	US-PATENT-CLASS-307-223R	c 09	N72-17157* #
US-PATENT-CLASS-29-517	c 15	N71-17650* #	US-PATENT-CLASS-292-122	c 37	N75-19685* #	US-PATENT-CLASS-307-225	c 33	N74-10223* #
US-PATENT-CLASS-29-526	c 37	N76-19437* #	US-PATENT-CLASS-294-1R	c 35	N76-16392* #	US-PATENT-CLASS-307-225R	c 33	N75-31330* #
US-PATENT-CLASS-29-526	c 39	N76-31562* #	US-PATENT-CLASS-294-106	c 37	N81-14320* #	US-PATENT-CLASS-307-225R	c 33	N77-24375* #
US-PATENT-CLASS-29-527 2	c 15	N72-20444* #	US-PATENT-CLASS-294-113	c 37	N80-14398* #	US-PATENT-CLASS-307-225R	c 60	N81-15706* #
US-PATENT-CLASS-29-527 2	c 15	N73-32360* #	US-PATENT-CLASS-294-116	c 37	N75-33395* #	US-PATENT-CLASS-307-227	c 09	N72-17157* #
US-PATENT-CLASS-29-527 2	c 37	N74-11301* #	US-PATENT-CLASS-294-116	c 37	N82-32731* #	US-PATENT-CLASS-307-227	c 33	N75-19522* #
US-PATENT-CLASS-29-527 2	c 24	N75-33181* #	US-PATENT-CLASS-294-15	c 15	N71-29133* #	US-PATENT-CLASS-307-229	c 09	N71-12520* #
US-PATENT-CLASS-29-527 2	c 24	N77-19171* #	US-PATENT-CLASS-294-19R	c 35	N76-16392* #	US-PATENT-CLASS-307-229	c 09	N72-23173* #
US-PATENT-CLASS-29-57 4	c 44	N79-24431* #	US-PATENT-CLASS-294-83	c 15	N71-24897* #	US-PATENT-CLASS-307-229	c 33	N75-18479* #
US-PATENT-CLASS-29-570	c 26	N72-28761* #	US-PATENT-CLASS-294-86 33	c 37	N75-33395* #	US-PATENT-CLASS-307-229	c 33	N77-17354* #
US-PATENT-CLASS-29-571	c 35	N75-13213* #	US-PATENT-CLASS-294-86R	c 37	N80-14398* #	US-PATENT-CLASS-307-229	c 33	N78-32339* #
US-PATENT-CLASS-29-571	c 33	N78-27326* #	US-PATENT-CLASS-294-86R	c 37	N81-27519* #	US-PATENT-CLASS-307-230	c 10	N72-16172* #
US-PATENT-CLASS-29-571	c 33	N81-26360* #	US-PATENT-CLASS-294-93	c 54	N81-26718* #	US-PATENT-CLASS-307-230	c 09	N72-12455* #
US-PATENT-CLASS-29-572	c 09	N71-23027* #	US-PATENT-CLASS-296-1S	c 85	N82-32288* #	US-PATENT-CLASS-307-230	c 09	N73-20232* #
US-PATENT-CLASS-29-572	c 03	N71-24681* #	US-PATENT-CLASS-296-24C	c 85	N82-32288* #	US-PATENT-CLASS-307-230	c 33	N74-32712* #
US-PATENT-CLASS-29-572	c 03	N72-22041* #	US-PATENT-CLASS-296-91	c 85	N82-32288* #	US-PATENT-CLASS-307-230	c 33	N77-17354* #
US-PATENT-CLASS-29-572	c 44	N74-14784* #	US-PATENT-CLASS-297-216	c 05	N70-35152* #	US-PATENT-CLASS-307-230	c 33	N78-32339* #
US-PATENT-CLASS-29-572	c 44	N76-14600* #	US-PATENT-CLASS-297-232	c 05	N72-11085* #	US-PATENT-CLASS-307-231	c 09	N72-22202* #
US-PATENT-CLASS-29-572	c 44	N76-28635* #	US-PATENT-CLASS-297-385	c 05	N71-12341* #	US-PATENT-CLASS-307-232	c 33	N77-21314* #
US-PATENT-CLASS-29-572	c 44	N77-10635* #	US-PATENT-CLASS-297-385	c 05	N75-25915* #	US-PATENT-CLASS-307-232	c 33	N79-11313* #
US-PATENT-CLASS-29-572	c 44	N78-24609* #	US-PATENT-CLASS-297-386	c 15	N73-30460* #	US-PATENT-CLASS-307-233R	c 32	N79-10262* #
US-PATENT-CLASS-29-572	c 44	N78-25527* #	US-PATENT-CLASS-297-388	c 05	N75-25915* #	US-PATENT-CLASS-307-233R	c 33	N81-17348* #
US-PATENT-CLASS-29-572	c 44	N78-25528* #	US-PATENT-CLASS-297-389	c 05	N75-25915* #	US-PATENT-CLASS-307-233	c 09	N72-25257* #
US-PATENT-CLASS-29-572	c 44	N78-25529* #	US-PATENT-CLASS-297-68	c 05	N71-12343* #	US-PATENT-CLASS-307-233	c 10	N73-26229* #
US-PATENT-CLASS-29-572	c 44	N79-11468* #	US-PATENT-CLASS-297-68	c 05	N72-11085* #	US-PATENT-CLASS-307-233	c 33	N77-13315* #
US-PATENT-CLASS-29-572	c 44	N79-11472* #	US-PATENT-CLASS-299-13	c 43	N81-26509* #	US-PATENT-CLASS-307-234	c 10	N71-23315* #
US-PATENT-CLASS-29-572	c 44	N79-17314* #	US-PATENT-CLASS-299-17	c 43	N81-26509* #	US-PATENT-CLASS-307-234	c 09	N71-27016* #
US-PATENT-CLASS-29-572	c 44	N79-18444* #	US-PATENT-CLASS-299-1	c 43	N79-26439* #	US-PATENT-CLASS-307-234	c 08	N71-29138* #
US-PATENT-CLASS-29-572	c 44	N79-24431* #	US-PATENT-CLASS-299-20	c 43	N81-26509* #	US-PATENT-CLASS-307-235R	c 33	N75-18479* #
US-PATENT-CLASS-29-572	c 44	N79-26475* #	US-PATENT-CLASS-299-67	c 46	N74-23068* #	US-PATENT-CLASS-307-235	c 10	N71-19471* #
US-PATENT-CLASS-29-572	c 44	N79-31752* #	US-PATENT-CLASS-299-86	c 46	N74-23068* #	US-PATENT-CLASS-307-235	c 09	N71-23545* #
US-PATENT-CLASS-29-572	c 44	N80-14474* #	US-PATENT-CLASS-3-1 1	c 05	N73-32013* #	US-PATENT-CLASS-307-235	c 10	N71-24862* #
US-PATENT-CLASS-29-572	c 44	N82-28780* #	US-PATENT-CLASS-3-1 1	c 52	N77-14738* #	US-PATENT-CLASS-307-237	c 09	N72-22200* #
US-PATENT-CLASS-29-572	c 44	N82-29709* #	US-PATENT-CLASS-3-1 1	c 54	N79-24652* #	US-PATENT-CLASS-307-237	c 32	N74-19788* #
US-PATENT-CLASS-29-573	c 14	N73-13417* #	US-PATENT-CLASS-3-1 2	c 52	N77-14735* #	US-PATENT-CLASS-307-238	c 33	N75-31331* #
US-PATENT-CLASS-29-576J	c 35	N82-31659* #	US-PATENT-CLASS-3-1 2	c 52	N78-10686* #	US-PATENT-CLASS-307-238	c 33	N77-21314* #
US-PATENT-CLASS-29-576S	c 35	N82-31659* #	US-PATENT-CLASS-3-1 9	c 27	N78-17215* #	US-PATENT-CLASS-307-241	c 09	N72-22201* #
US-PATENT-CLASS-29-577	c 44	N79-26475* #	US-PATENT-CLASS-3-12 5	c 54	N79-26772* #	US-PATENT-CLASS-307-242	c 10	N73-13235* #
US-PATENT-CLASS-29-578	c 26	N72-17820* #	US-PATENT-CLASS-3-12 5	c 54	N79-24652* #	US-PATENT-CLASS-		



US-PATENT-CLASS-307-243	c 08	N72-22162* #	US-PATENT-CLASS-307-321	c 33	N75-25041* #	US-PATENT-CLASS-308-87R	c 24	N79-17916* #
US-PATENT-CLASS-307-243	c 33	N74-22814* #	US-PATENT-CLASS-307-322	c 10	N72-22236* #	US-PATENT-CLASS-308-9	c 15	N70-34664* #
US-PATENT-CLASS-307-246	c 09	N71-27016* #	US-PATENT-CLASS-307-323	c 10	N72-22236* #	US-PATENT-CLASS-308-9	c 15	N70-38620* #
US-PATENT-CLASS-307-247	c 09	N71-29139* #	US-PATENT-CLASS-307-350	c 33	N78-18308* #	US-PATENT-CLASS-308-9	c 15	N70-39896* #
US-PATENT-CLASS-307-247	c 09	N72-22202* #	US-PATENT-CLASS-307-352	c 33	N81-27396* #	US-PATENT-CLASS-308-9	c 15	N71-20739* #
US-PATENT-CLASS-307-251	c 09	N71-33109* #	US-PATENT-CLASS-307-353	c 33	N81-27396* #	US-PATENT-CLASS-308-9	c 14	N71-26627* #
US-PATENT-CLASS-307-251	c 08	N72-22162* #	US-PATENT-CLASS-307-35	c 33	N74-34638* #	US-PATENT-CLASS-308-9	c 15	N72-17451* #
US-PATENT-CLASS-307-252F	c 09	N72-17153* #	US-PATENT-CLASS-307-360	c 33	N78-18308* #	US-PATENT-CLASS-308-9	c 15	N73-32359* #
US-PATENT-CLASS-307-252J	c 09	N72-17153* #	US-PATENT-CLASS-307-38	c 03	N73-31988* #	US-PATENT-CLASS-308-9	c 37	N76-15461* #
US-PATENT-CLASS-307-252J	c 09	N72-22201* #	US-PATENT-CLASS-307-415	c 33	N82-24418* #	US-PATENT-CLASS-308-9	c 37	N77-26486* #
US-PATENT-CLASS-307-252K	c 09	N72-22201* #	US-PATENT-CLASS-307-53	c 10	N71-26626* #	US-PATENT-CLASS-308-9	c 37	N79-10418* #
US-PATENT-CLASS-307-252L	c 33	N74-27682* #	US-PATENT-CLASS-307-53	c 33	N78-17296* #	US-PATENT-CLASS-308-9	c 15	N71-24696* #
US-PATENT-CLASS-307-252N	c 09	N72-23171* #	US-PATENT-CLASS-307-63	c 44	N80-14472* #	US-PATENT-CLASS-310-101	c 03	N69-39890* #
US-PATENT-CLASS-307-252Q	c 33	N74-27682* #	US-PATENT-CLASS-307-64	c 33	N77-30365* #	US-PATENT-CLASS-310-10	c 09	N71-23443* #
US-PATENT-CLASS-307-252R	c 09	N72-23171* #	US-PATENT-CLASS-307-66	c 44	N80-14472* #	US-PATENT-CLASS-310-10	c 09	N71-24904* #
US-PATENT-CLASS-307-252UA	c 33	N81-27395* #	US-PATENT-CLASS-307-69	c 33	N78-17296* #	US-PATENT-CLASS-310-10	c 09	N72-25255* #
US-PATENT-CLASS-307-252	c 10	N69-39888* #	US-PATENT-CLASS-307-81	c 09	N72-17157* #	US-PATENT-CLASS-310-10	c 20	N75-24837* #
US-PATENT-CLASS-307-252	c 09	N71-12514* #	US-PATENT-CLASS-307-82	c 33	N79-24254* #	US-PATENT-CLASS-310-11	c 33	N77-26387* #
US-PATENT-CLASS-307-253	c 10	N71-27126* #	US-PATENT-CLASS-307-83	c 09	N72-25262* #	US-PATENT-CLASS-310-11	c 25	N69-21929* #
US-PATENT-CLASS-307-254	c 10	N71-24799* #	US-PATENT-CLASS-307-88 3	c 09	N72-25258* #	US-PATENT-CLASS-310-11	c 03	N69-39983* #
US-PATENT-CLASS-307-254	c 09	N72-22200* #	US-PATENT-CLASS-307-88 5	c 09	N70-40272* #	US-PATENT-CLASS-310-11	c 03	N70-36803* #
US-PATENT-CLASS-307-257	c 09	N72-21247* #	US-PATENT-CLASS-307-88 5	c 09	N70-41675* #	US-PATENT-CLASS-310-11	c 14	N72-22439* #
US-PATENT-CLASS-307-259	c 09	N72-21247* #	US-PATENT-CLASS-307-88 5	c 10	N70-42032* #	US-PATENT-CLASS-310-11	c 12	N72-25292* #
US-PATENT-CLASS-307-259	c 09	N72-23171* #	US-PATENT-CLASS-307-88 5	c 09	N71-10673* #	US-PATENT-CLASS-310-11	c 35	N74-21018* #
US-PATENT-CLASS-307-259	c 10	N73-13235* #	US-PATENT-CLASS-307-88 5	c 10	N71-15910* #	US-PATENT-CLASS-310-11	c 36	N75-32441* #
US-PATENT-CLASS-307-260	c 09	N71-23311* #	US-PATENT-CLASS-307-88 5	c 10	N71-16042* #	US-PATENT-CLASS-310-12	c 33	N82-24421* #
US-PATENT-CLASS-307-260	c 05	N71-23317* #	US-PATENT-CLASS-307-88 5	c 10	N71-28739* #	US-PATENT-CLASS-310-153	c 44	N78-24608* #
US-PATENT-CLASS-307-260	c 33	N75-19515* #	US-PATENT-CLASS-307-88MP	c 09	N72-22197* #	US-PATENT-CLASS-310-154	c 44	N78-24608* #
US-PATENT-CLASS-307-261	c 09	N71-33109* #	US-PATENT-CLASS-307-88	c 08	N70-34743* #	US-PATENT-CLASS-310-15	c 09	N72-25255* #
US-PATENT-CLASS-307-261	c 09	N72-25251* #	US-PATENT-CLASS-307-88	c 09	N70-38604* #	US-PATENT-CLASS-310-168	c 09	N71-25999* #
US-PATENT-CLASS-307-262	c 10	N72-16172* #	US-PATENT-CLASS-307-88	c 09	N71-24803* #	US-PATENT-CLASS-310-168	c 33	N77-26387* #
US-PATENT-CLASS-307-262	c 09	N72-22197* #	US-PATENT-CLASS-307-88	c 09	N71-26000* #	US-PATENT-CLASS-310-178	c 44	N78-24608* #
US-PATENT-CLASS-307-262	c 09	N72-33204* #	US-PATENT-CLASS-307-92	c 09	N72-27227* #	US-PATENT-CLASS-310-2	c 33	N79-20827* #
US-PATENT-CLASS-307-263	c 09	N71-23270* #	US-PATENT-CLASS-307-98	c 33	N78-28415* #	US-PATENT-CLASS-310-231	c 71	N79-20314* #
US-PATENT-CLASS-307-263	c 09	N71-28926* #	US-PATENT-CLASS-308-DIG 1	c 15	N72-17451* #	US-PATENT-CLASS-310-254	c 09	N71-25999* #
US-PATENT-CLASS-307-265	c 09	N69-39987* #	US-PATENT-CLASS-308-DIG 1	c 37	N79-10418* #	US-PATENT-CLASS-310-269	c 44	N78-24608* #
US-PATENT-CLASS-307-265	c 10	N71-23029* #	US-PATENT-CLASS-308-DIG 8	c 24	N79-17916* #	US-PATENT-CLASS-310-26	c 71	N79-20827* #
US-PATENT-CLASS-307-265	c 09	N71-28468* #	US-PATENT-CLASS-308-DIG 9	c 24	N79-17916* #	US-PATENT-CLASS-310-2	c 03	N72-23048* #
US-PATENT-CLASS-307-265	c 10	N71-28860* #	US-PATENT-CLASS-308-10	c 15	N71-22997* #	US-PATENT-CLASS-310-306	c 33	N80-18287* #
US-PATENT-CLASS-307-265	c 08	N71-29138* #	US-PATENT-CLASS-308-10	c 15	N72-33476* #	US-PATENT-CLASS-310-30	c 44	N80-29834* #
US-PATENT-CLASS-307-265	c 09	N71-29139* #	US-PATENT-CLASS-308-10	c 35	N74-18323* #	US-PATENT-CLASS-310-311	c 35	N80-20559* #
US-PATENT-CLASS-307-265	c 33	N78-18308* #	US-PATENT-CLASS-308-10	c 37	N75-18574* #	US-PATENT-CLASS-310-319	c 33	N80-23559* #
US-PATENT-CLASS-307-267	c 09	N71-20447* #	US-PATENT-CLASS-308-10	c 37	N76-18459* #	US-PATENT-CLASS-310-322	c 71	N79-20827* #
US-PATENT-CLASS-307-267	c 33	N74-32711* #	US-PATENT-CLASS-308-10	c 37	N77-17464* #	US-PATENT-CLASS-310-326	c 38	N79-14398* #
US-PATENT-CLASS-307-267	c 33	N75-18479* #	US-PATENT-CLASS-308-10	c 44	N78-24608* #	US-PATENT-CLASS-310-327	c 35	N80-20559* #
US-PATENT-CLASS-307-268	c 09	N69-24317* #	US-PATENT-CLASS-308-10	c 37	N78-27424* #	US-PATENT-CLASS-310-334	c 71	N79-20827* #
US-PATENT-CLASS-307-269	c 60	N81-15706* #	US-PATENT-CLASS-308-10	c 35	N79-26372* #	US-PATENT-CLASS-310-334	c 35	N80-20559* #
US-PATENT-CLASS-307-270	c 33	N78-17294* #	US-PATENT-CLASS-308-10	c 71	N81-15767* #	US-PATENT-CLASS-310-336	c 38	N79-14398* #
US-PATENT-CLASS-307-271	c 10	N73-32145* #	US-PATENT-CLASS-308-121	c 37	N74-32921* #	US-PATENT-CLASS-310-360	c 35	N80-20559* #
US-PATENT-CLASS-307-273	c 10	N71-18723* #	US-PATENT-CLASS-308-121	c 37	N75-30562* #	US-PATENT-CLASS-310-4A	c 37	N77-19458* #
US-PATENT-CLASS-307-273	c 09	N71-27016* #	US-PATENT-CLASS-308-121	c 37	N79-10418* #	US-PATENT-CLASS-310-4R	c 33	N74-27683* #
US-PATENT-CLASS-307-273	c 09	N71-28468* #	US-PATENT-CLASS-308-122	c 37	N76-15461* #	US-PATENT-CLASS-310-4R	c 73	N77-18891* #
US-PATENT-CLASS-307-273	c 10	N71-28860* #	US-PATENT-CLASS-308-160	c 37	N76-15461* #	US-PATENT-CLASS-310-40	c 20	N75-24837* #
US-PATENT-CLASS-307-273	c 09	N71-29139* #	US-PATENT-CLASS-308-160	c 37	N76-29588* #	US-PATENT-CLASS-310-42	c 14	N72-22439* #
US-PATENT-CLASS-307-273	c 10	N72-20221* #	US-PATENT-CLASS-308-160	c 37	N79-10418* #	US-PATENT-CLASS-310-46	c 33	N79-20314* #
US-PATENT-CLASS-307-280	c 33	N77-21314* #	US-PATENT-CLASS-308-163	c 37	N76-29588* #	US-PATENT-CLASS-310-4	c 09	N69-21313* #
US-PATENT-CLASS-307-284	c 09	N72-22201* #	US-PATENT-CLASS-308-163	c 37	N79-10418* #	US-PATENT-CLASS-310-4	c 03	N69-39898* #
US-PATENT-CLASS-307-288	c 09	N71-23015* #	US-PATENT-CLASS-308-168	c 24	N79-17916* #	US-PATENT-CLASS-310-4	c 09	N69-39929* #
US-PATENT-CLASS-307-288	c 09	N71-28468* #	US-PATENT-CLASS-308-170	c 15	N71-28465* #	US-PATENT-CLASS-310-4	c 03	N70-34134* #
US-PATENT-CLASS-307-288	c 10	N72-20221* #	US-PATENT-CLASS-308-170	c 37	N76-29588* #	US-PATENT-CLASS-310-4	c 03	N71-11055* #
US-PATENT-CLASS-307-288	c 09	N72-22202* #	US-PATENT-CLASS-308-171	c 24	N79-17916* #	US-PATENT-CLASS-310-4	c 22	N71-23599* #
US-PATENT-CLASS-307-289	c 10	N71-19547* #	US-PATENT-CLASS-308-172	c 37	N79-10418* #	US-PATENT-CLASS-310-4	c 09	N71-24807* #
US-PATENT-CLASS-307-28	c 03	N73-31988* #	US-PATENT-CLASS-308-174	c 54	N75-12616* #	US-PATENT-CLASS-310-4	c 33	N77-27862* #
US-PATENT-CLASS-307-290	c 33	N74-22814* #	US-PATENT-CLASS-308-176	c 15	N71-22982* #	US-PATENT-CLASS-310-4	c 09	N71-28421* #
US-PATENT-CLASS-307-291	c 60	N81-15706* #	US-PATENT-CLASS-308-177	c 15	N71-29136* #	US-PATENT-CLASS-310-4	c 09	N72-25260* #
US-PATENT-CLASS-307-294	c 09	N71-29139* #	US-PATENT-CLASS-308-187	c 15	N71-26189* #	US-PATENT-CLASS-310-4	c 09	N72-27228* #
US-PATENT-CLASS-307-295	c 10	N72-17171* #	US-PATENT-CLASS-308-188	c 15	N73-30458* #	US-PATENT-CLASS-310-4	c 20	N75-24837* #
US-PATENT-CLASS-307-295	c 10	N72-20223* #	US-PATENT-CLASS-308-188	c 37	N74-21064* #	US-PATENT-CLASS-310-4	c 36	N75-30524* #
US-PATENT-CLASS-307-295	c 09	N72-21245* #	US-PATENT-CLASS-308-191	c 37	N74-21064* #	US-PATENT-CLASS-310-4	c 44	N76-16612* #
US-PATENT-CLASS-307-295	c 09	N72-33204* #	US-PATENT-CLASS-308-191	c 37	N75-31446* #	US-PATENT-CLASS-310-51	c 15	N71-27169* #
US-PATENT-CLASS-307-295	c 33	N74-34638* #	US-PATENT-CLASS-308-193	c 15	N73-30458* #	US-PATENT-CLASS-310-52	c 20	N75-24837* #
US-PATENT-CLASS-307-295	c 33	N77-13315* #	US-PATENT-CLASS-308-194	c 37	N79-11404* #	US-PATENT-CLASS-310-54	c 09	N71-20446* #
US-PATENT-CLASS-307-296	c 08	N71-12494* #	US-PATENT-CLASS-308-195	c 15	N72-22490* #	US-PATENT-CLASS-310-5	c 03	N70-35408* #
US-PATENT-CLASS-307-296	c 07	N71-28430* #	US-PATENT-CLASS-308-195	c 37	N75-31446* #	US-PATENT-CLASS-310-68	c 15	N72-25456* #
US-PATENT-CLASS-307-297	c 33	N78-17294* #	US-PATENT-CLASS-308-195	c 37	N77-32500* #	US-PATENT-CLASS-310-8.2	c 35	N76-15432* #
US-PATENT-CLASS-307-299	c 08	N72-21198* #	US-PATENT-CLASS-308-195	c 37	N77-32501* #	US-PATENT-CLASS-310-8.5	c 14	N71-22993* #
US-PATENT-CLASS-307-299	c 26	N72-21701* #	US-PATENT-CLASS-308-1	c 31	N71-26537* #	US-PATENT-CLASS-310-80	c 15	N72-25456* #
US-PATENT-CLASS-307-29	c 03	N73-31988* #	US-PATENT-CLASS-308-2A	c 15	N72-26371* #	US-PATENT-CLASS-310-82	c 33	N79-20314* #
US-PATENT-CLASS-307-300	c 10	N71-27126* #	US-PATENT-CLASS-308-2A	c 15	N73-12488* #	US-PATENT-CLASS-310-83	c 15	N72-25456* #
US-PATENT-CLASS-307-303	c 08	N72-21198* #	US-PATENT-CLASS-308-201	c 37	N75-31446* #	US-PATENT-CLASS-310-9.1	c 15	N71-21311* #
US-PATENT-CLASS-307-304	c 09	N72-22201* #	US-PATENT-CLASS-308-2	c 15	N71-23812* #	US-PATENT-CLASS-310-93	c 15	N71-17652* #
US-PATENT-CLASS-307-304	c 09	N73-20232* #	US-PATENT-CLASS-308-35	c 15	N73-32359* #	US-PATENT-CLASS-311-37	c 35	N75-29380* #
US-PATENT-CLASS-307-304	c 33	N74-34638* #	US-PATENT-CLASS-308-5R	c 37	N77-28486* #	US-PATENT-CLASS-312-1	c 05	N71-23080* #
US-PATENT-CLASS-307-305	c 09	N72-23171* #	US-PATENT-CLASS-308-5R	c 37	N79-10418* #	US-PATENT-CLASS-312-1	c 05	N73-20137* #
US-PATENT-CLASS-307-306	c 33	N78-13320* #	US-PATENT-CLASS-308-5	c 15	N71-10617* #	US-PATENT-CLASS-312-1	c 37	N74-20063* #
US-PATENT-CLASS-307-306	c 33	N81-17348* #	US-PATENT-CLASS-308-5	c 15	N72-11388* #	US-PATENT-CLASS-312-209	c 37	N74-18123* #
US-PATENT-CLASS-307-308	c 14	N73-28488* #	US-PATENT-CLASS-308-5	c 15	N72-17451* #	US-PATENT-CLASS-312-257	c 31	N72-22874* #
US-PATENT-CLASS-307-309	c 35	N75-13213* #	US-PATENT-CLASS-308-72	c 37	N76-15461* #	US-PATENT-CLASS-312-296	c 09	N71-18600* #
US-PATENT-CLASS-307-310	c 09	N73-14214* #	US-PATENT-CLASS-308-72	c 37	N77-32500* #	US-PATENT-CLASS-312-319	c 37	N79-33467* #
US-PATENT-CLASS-307-311	c 14	N72-18411* #	US-PATENT-CLASS-308-72	c 37	N79-11404* #	US-PATENT-CLASS-313-DIG 8	c 28	N73-24783* #
US-PATENT-CLASS-307-311	c 08	N72-21198* #	US-PATENT-CLASS-308-73	c 37	N74-21061* #	US-PATENT-CLASS-313-104	c 14	N73-32317* #
US-PATENT-CLASS-307-311	c 09	N73-14214* #	US-PATENT-CLASS-308-73	c 37	N75-30562* #	US-PATENT-CLASS-313-109.5	c 09	N71-33519* #
US-PATENT-CLASS-307-313	c 10	N72-20221* #	US-PATENT-CLASS-308-73	c 37	N76-15461* #	US-PATENT-CLASS-313-11.5	c 28	N70-39925* #
US-PATENT-CLASS-307-317	c 09	N72-22200* #	US-PATENT-CLASS-308-73	c 37	N77-28486* #	US-PATENT-CLASS-313-110	c 09	N71-12521* #



US-PATENT-CLASS-313-156	c 25	N70-34661* #	US-PATENT-CLASS-315-111 6	c 75	N76-14931* #	US-PATENT-CLASS-317-158	c 15	N73-32361* #
US-PATENT-CLASS-313-156	c 72	N80-27163* #	US-PATENT-CLASS-315-111 6	c 20	N77-20162* #	US-PATENT-CLASS-317-16	c 09	N69-39897* #
US-PATENT-CLASS-313-161	c 25	N73-25760* #	US-PATENT-CLASS-315-111	c 25	N70-33267* #	US-PATENT-CLASS-317-16	c 33	N74-17929* #
US-PATENT-CLASS-313-161	c 09	N73-30181* #	US-PATENT-CLASS-315-111	c 25	N70-41628* #	US-PATENT-CLASS-317-20	c 33	N77-10429* #
US-PATENT-CLASS-313-161	c 33	N77-21315* #	US-PATENT-CLASS-315-111	c 25	N71-15562* #	US-PATENT-CLASS-317-20	c 10	N71-26531* #
US-PATENT-CLASS-313-175	c 33	N77-21316* #	US-PATENT-CLASS-315-111	c 24	N71-16213* #	US-PATENT-CLASS-317-230	c 09	N71-27232* #
US-PATENT-CLASS-313-175	c 31	N78-17238* #	US-PATENT-CLASS-315-111	c 25	N71-21693* #	US-PATENT-CLASS-317-230	c 26	N72-28761* #
US-PATENT-CLASS-313-176	c 31	N78-17238* #	US-PATENT-CLASS-315-111	c 25	N71-21693* #	US-PATENT-CLASS-317-231	c 09	N71-27232* #
US-PATENT-CLASS-313-180	c 33	N77-21316* #	US-PATENT-CLASS-315-111	c 28	N71-26781* #	US-PATENT-CLASS-317-234A	c 15	N73-14469* #
US-PATENT-CLASS-313-180	c 31	N78-17238* #	US-PATENT-CLASS-315-111	c 25	N71-29184* #	US-PATENT-CLASS-317-234D	c 14	N72-31446* #
US-PATENT-CLASS-313-182	c 33	N77-22386* #	US-PATENT-CLASS-315-111	c 09	N71-33519* #	US-PATENT-CLASS-317-234E	c 33	N74-12951* #
US-PATENT-CLASS-313-184	c 33	N77-21315* #	US-PATENT-CLASS-315-111	c 25	N72-24753* #	US-PATENT-CLASS-317-234F	c 33	N74-12951* #
US-PATENT-CLASS-313-184	c 33	N77-21316* #	US-PATENT-CLASS-315-111	c 25	N72-32688* #	US-PATENT-CLASS-317-234G	c 14	N72-31446* #
US-PATENT-CLASS-313-184	c 31	N78-17238* #	US-PATENT-CLASS-315-111	c 14	N73-30391* #	US-PATENT-CLASS-317-234G	c 15	N73-14469* #
US-PATENT-CLASS-313-186	c 25	N72-24753* #	US-PATENT-CLASS-315-111	c 75	N75-13625* #	US-PATENT-CLASS-317-234G	c 09	N73-27150* #
US-PATENT-CLASS-313-209	c 33	N74-12913* #	US-PATENT-CLASS-315-111	c 33	N75-29318* #	US-PATENT-CLASS-317-234J	c 26	N72-25679* #
US-PATENT-CLASS-313-212	c 25	N72-24753* #	US-PATENT-CLASS-315-111	c 37	N75-29426* #	US-PATENT-CLASS-317-234L	c 09	N73-27150* #
US-PATENT-CLASS-313-217	c 28	N73-27699* #	US-PATENT-CLASS-315-111	c 33	N74-21850* #	US-PATENT-CLASS-317-234M	c 09	N73-27150* #
US-PATENT-CLASS-313-217	c 33	N74-12913* #	US-PATENT-CLASS-315-112	c 33	N74-21850* #	US-PATENT-CLASS-317-234M	c 33	N74-12951* #
US-PATENT-CLASS-313-218	c 28	N73-27699* #	US-PATENT-CLASS-315-135	c 09	N72-25250* #	US-PATENT-CLASS-317-234N	c 09	N73-27150* #
US-PATENT-CLASS-313-224	c 25	N72-24753* #	US-PATENT-CLASS-315-145	c 33	N80-14330* #	US-PATENT-CLASS-317-234N	c 33	N74-12951* #
US-PATENT-CLASS-313-224	c 33	N74-12913* #	US-PATENT-CLASS-315-151	c 14	N72-27411* #	US-PATENT-CLASS-317-234R	c 09	N73-27150* #
US-PATENT-CLASS-313-224	c 33	N77-21315* #	US-PATENT-CLASS-315-153	c 14	N73-16483* #	US-PATENT-CLASS-317-234R	c 33	N74-12951* #
US-PATENT-CLASS-313-224	c 31	N78-17238* #	US-PATENT-CLASS-315-153	c 74	N79-12890* #	US-PATENT-CLASS-317-234V	c 26	N72-21701* #
US-PATENT-CLASS-313-22	c 09	N71-26787* #	US-PATENT-CLASS-315-156	c 14	N72-27411* #	US-PATENT-CLASS-317-234V	c 09	N73-25235* #
US-PATENT-CLASS-313-22	c 31	N78-17237* #	US-PATENT-CLASS-315-158	c 14	N72-27411* #	US-PATENT-CLASS-317-234	c 14	N69-23191* #
US-PATENT-CLASS-313-22	c 31	N78-25256* #	US-PATENT-CLASS-315-160	c 09	N71-12540* #	US-PATENT-CLASS-317-234	c 09	N69-27422* #
US-PATENT-CLASS-313-22	c 34	N79-20336* #	US-PATENT-CLASS-315-169R	c 23	N73-13660* #	US-PATENT-CLASS-317-234	c 26	N71-18064* #
US-PATENT-CLASS-313-230	c 28	N71-28850* #	US-PATENT-CLASS-315-169R	c 36	N75-19652* #	US-PATENT-CLASS-317-235AG	c 09	N73-15235* #
US-PATENT-CLASS-313-230	c 28	N73-27699* #	US-PATENT-CLASS-315-169TV	c 23	N73-13660* #	US-PATENT-CLASS-317-235AJ	c 26	N72-25679* #
US-PATENT-CLASS-313-230	c 20	N77-20162* #	US-PATENT-CLASS-315-176	c 33	N77-28385* #	US-PATENT-CLASS-317-235AJ	c 09	N73-32025* #
US-PATENT-CLASS-313-231 3	c 20	N77-20162* #	US-PATENT-CLASS-315-18	c 32	N74-20813* #	US-PATENT-CLASS-317-235AM	c 09	N73-19235* #
US-PATENT-CLASS-313-231 3	c 75	N78-27913* #	US-PATENT-CLASS-315-18	c 33	N75-19517* #	US-PATENT-CLASS-317-235A	c 26	N72-25679* #
US-PATENT-CLASS-313-231 4	c 20	N77-10148* #	US-PATENT-CLASS-315-209CD	c 37	N79-11405* #	US-PATENT-CLASS-317-235A	c 09	N73-32025* #
US-PATENT-CLASS-313-231 4	c 72	N80-33186* #	US-PATENT-CLASS-315-209SC	c 37	N79-11405* #	US-PATENT-CLASS-317-235H	c 35	N75-13213* #
US-PATENT-CLASS-313-231	c 06	N69-39899* #	US-PATENT-CLASS-315-211	c 33	N74-20859* #	US-PATENT-CLASS-317-235K	c 09	N73-15235* #
US-PATENT-CLASS-313-231	c 09	N71-23190* #	US-PATENT-CLASS-315-22R	c 10	N72-31273* #	US-PATENT-CLASS-317-235M	c 14	N72-31446* #
US-PATENT-CLASS-313-231	c 09	N71-33519* #	US-PATENT-CLASS-315-228	c 33	N74-20859* #	US-PATENT-CLASS-317-235N	c 09	N73-19235* #
US-PATENT-CLASS-313-231	c 25	N72-24753* #	US-PATENT-CLASS-315-22	c 10	N72-20225* #	US-PATENT-CLASS-317-235N	c 35	N74-15090* #
US-PATENT-CLASS-313-231	c 25	N72-32688* #	US-PATENT-CLASS-315-22	c 32	N74-20813* #	US-PATENT-CLASS-317-235R	c 26	N72-21701* #
US-PATENT-CLASS-313-231	c 28	N73-24783* #	US-PATENT-CLASS-315-22	c 33	N78-17293* #	US-PATENT-CLASS-317-235R	c 26	N72-25679* #
US-PATENT-CLASS-313-231	c 25	N73-25760* #	US-PATENT-CLASS-315-241R	c 37	N79-11405* #	US-PATENT-CLASS-317-235R	c 14	N72-31446* #
US-PATENT-CLASS-313-236	c 09	N71-26182* #	US-PATENT-CLASS-315-241	c 09	N71-13518* #	US-PATENT-CLASS-317-235R	c 09	N73-19235* #
US-PATENT-CLASS-313-237	c 09	N71-26182* #	US-PATENT-CLASS-315-248	c 09	N73-30181* #	US-PATENT-CLASS-317-235R	c 09	N73-32112* #
US-PATENT-CLASS-313-240	c 20	N77-10148* #	US-PATENT-CLASS-315-24	c 08	N71-20571* #	US-PATENT-CLASS-317-235T	c 09	N73-19235* #
US-PATENT-CLASS-313-250	c 31	N76-31365* #	US-PATENT-CLASS-315-258	c 16	N73-32391* #	US-PATENT-CLASS-317-235UA	c 09	N73-19235* #
US-PATENT-CLASS-313-271	c 25	N71-20747* #	US-PATENT-CLASS-315-25	c 10	N72-20225* #	US-PATENT-CLASS-317-235WW	c 09	N73-32112* #
US-PATENT-CLASS-313-306	c 31	N76-31365* #	US-PATENT-CLASS-315-260	c 33	N80-14330* #	US-PATENT-CLASS-317-235	c 09	N69-24318* #
US-PATENT-CLASS-313-309	c 10	N72-27246* #	US-PATENT-CLASS-315-26	c 09	N71-23189* #	US-PATENT-CLASS-317-235	c 09	N72-32025* #
US-PATENT-CLASS-313-309	c 31	N76-31365* #	US-PATENT-CLASS-315-297	c 14	N72-27411* #	US-PATENT-CLASS-317-238	c 09	N71-27232* #
US-PATENT-CLASS-313-311	c 33	N77-18891* #	US-PATENT-CLASS-315-3 5	c 09	N73-13208* #	US-PATENT-CLASS-317-245	c 33	N79-21265* #
US-PATENT-CLASS-313-32	c 73	N74-12913* #	US-PATENT-CLASS-315-3 5	c 33	N79-10339* #	US-PATENT-CLASS-317-246	c 14	N69-21541* #
US-PATENT-CLASS-313-32	c 33	N77-21315* #	US-PATENT-CLASS-315-3 5	c 33	N82-26568* #	US-PATENT-CLASS-317-246	c 33	N76-21390* #
US-PATENT-CLASS-313-336	c 10	N72-27246* #	US-PATENT-CLASS-315-3 6	c 33	N79-10339* #	US-PATENT-CLASS-317-246	c 35	N76-22509* #
US-PATENT-CLASS-313-338	c 31	N76-31365* #	US-PATENT-CLASS-315-3 6	c 33	N82-24415* #	US-PATENT-CLASS-317-247	c 14	N72-24477* #
US-PATENT-CLASS-313-348	c 35	N82-24471* #	US-PATENT-CLASS-315-3 6	c 33	N82-26568* #	US-PATENT-CLASS-317-258	c 09	N71-13522* #
US-PATENT-CLASS-313-351	c 10	N72-27246* #	US-PATENT-CLASS-315-30R	c 10	N72-31273* #	US-PATENT-CLASS-317-258	c 33	N76-15373* #
US-PATENT-CLASS-313-352	c 09	N71-22987* #	US-PATENT-CLASS-315-307	c 14	N72-27411* #	US-PATENT-CLASS-317-261	c 26	N72-28761* #
US-PATENT-CLASS-313-355	c 28	N73-27699* #	US-PATENT-CLASS-315-310	c 33	N75-27250* #	US-PATENT-CLASS-317-261	c 33	N76-15373* #
US-PATENT-CLASS-313-356	c 14	N72-29464* #	US-PATENT-CLASS-315-310	c 14	N72-27411* #	US-PATENT-CLASS-317-31	c 09	N71-12526* #
US-PATENT-CLASS-313-35	c 34	N79-20336* #	US-PATENT-CLASS-315-311	c 14	N72-27411* #	US-PATENT-CLASS-317-31	c 10	N71-23543* #
US-PATENT-CLASS-313-360	c 20	N77-20162* #	US-PATENT-CLASS-315-324	c 09	N73-30181* #	US-PATENT-CLASS-317-31	c 33	N74-17929* #
US-PATENT-CLASS-313-361	c 20	N77-10148* #	US-PATENT-CLASS-315-326	c 25	N72-24753* #	US-PATENT-CLASS-317-31	c 33	N77-14333* #
US-PATENT-CLASS-313-362	c 72	N80-27163* #	US-PATENT-CLASS-315-334	c 33	N80-14330* #	US-PATENT-CLASS-317-33SC	c 33	N74-14956* #
US-PATENT-CLASS-313-362	c 72	N80-33186* #	US-PATENT-CLASS-315-344	c 33	N77-21315* #	US-PATENT-CLASS-317-33	c 10	N71-26531* #
US-PATENT-CLASS-313-363	c 72	N80-27163* #	US-PATENT-CLASS-315-349	c 09	N72-25250* #	US-PATENT-CLASS-317-33	c 09	N71-27001* #
US-PATENT-CLASS-313-442	c 74	N78-18905* #	US-PATENT-CLASS-315-356	c 16	N73-32391* #	US-PATENT-CLASS-317-33	c 10	N71-27366* #
US-PATENT-CLASS-313-44	c 15	N69-24319* #	US-PATENT-CLASS-315-358	c 25	N72-24753* #	US-PATENT-CLASS-317-33	c 09	N71-29008* #
US-PATENT-CLASS-313-60	c 33	N77-22386* #	US-PATENT-CLASS-315-367	c 33	N75-26244* #	US-PATENT-CLASS-317-43	c 33	N74-14956* #
US-PATENT-CLASS-313-61S	c 73	N74-26767* #	US-PATENT-CLASS-315-369	c 33	N75-26244* #	US-PATENT-CLASS-317-46	c 33	N74-14956* #
US-PATENT-CLASS-313-61S	c 37	N78-13436* #	US-PATENT-CLASS-315-369	c 10	N72-27246* #	US-PATENT-CLASS-317-47	c 33	N74-14956* #
US-PATENT-CLASS-313-63	c 28	N70-41576* #	US-PATENT-CLASS-315-387	c 33	N75-26244* #	US-PATENT-CLASS-317-48	c 33	N74-14956* #
US-PATENT-CLASS-313-63	c 09	N71-10618* #	US-PATENT-CLASS-315-5 35	c 33	N74-10195* #	US-PATENT-CLASS-317-54	c 09	N71-29008* #
US-PATENT-CLASS-313-63	c 28	N71-26781* #	US-PATENT-CLASS-315-5 38	c 09	N73-13208* #	US-PATENT-CLASS-317-60	c 09	N71-29008* #
US-PATENT-CLASS-313-63	c 28	N73-24783* #	US-PATENT-CLASS-315-5 38	c 33	N74-10195* #	US-PATENT-CLASS-317-9	c 09	N71-22796* #
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US-PATENT-CLASS-313-63	c 75	N75-13625* #	US-PATENT-CLASS-317-DIG 3	c 10	N71-26334* #	US-PATENT-CLASS-318-116	c 71	N79-20827* #
US-PATENT-CLASS-313-7	c 14	N71-18482* #	US-PATENT-CLASS-317-DIG 6	c 10	N73-26228* #	US-PATENT-CLASS-318-135	c 33	N82-24421* #
US-PATENT-CLASS-313-7	c 14	N73-32324* #	US-PATENT-CLASS-317-100	c 10	N71-28783* #	US-PATENT-CLASS-318-137	c 33	N75-19524* #
US-PATENT-CLASS-313-93	c 35	N74-26949* #	US-PATENT-CLASS-317-100	c 10	N73-25243* #	US-PATENT-CLASS-318-138	c 09	N71-10677* #
US-PATENT-CLASS-313-93	c 35	N82-24471* #	US-PATENT-CLASS-317-101A	c 10	N73-32025* #	US-PATENT-CLASS-318-138	c 14	N71-17585* #
US-PATENT-CLASS-313-94	c 33	N76-31409* #	US-PATENT-CLASS-317-101A	c 23	N73-13660* #	US-PATENT-CLASS-318-138	c 10	N71-18772* #
US-PATENT-CLASS-313-94	c 74	N78-18905* #	US-PATENT-CLASS-317-101DH	c 15	N72-22486* #	US-PATENT-CLASS-318-138	c 09	N71-25999* #
US-PATENT-CLASS-314-129	c 15	N69-24266* #	US-PATENT-CLASS-317-101DH	c 10	N73-25243* #	US-PATENT-CLASS-318-138	c 33	N77-26386* #
US-PATENT-CLASS-314-928	c 32	N82-12298* #	US-PATENT-CLASS-317-101	c 09	N71-26133* #	US-PATENT-CLASS-318-138	c 33	N81-20352* #
US-PATENT-CLASS-315-DIG 2	c 16	N73-32391* #	US-PATENT-CLASS-317-117	c 15	N72-22486* #	US-PATENT-CLASS-318-15	c 37	N80-32716* #
US-PATENT-CLASS-315-101	c 16	N73-32391* #	US-PATENT-CLASS-317-120	c 15	N72-22486* #	US-PATENT-CLASS-318-167	c 33	N75-19524* #
US-PATENT-CLASS-315-108	c 09	N71-33519* #	US-PATENT-CLASS-317-122	c 15	N71-18701* #	US-PATENT-CLASS-318-176	c 33	N75-19524* #
US-PATENT-CLASS-315-108	c 33	N77-21316* #	US-PATENT-CLASS-317-123	c 09	N71-24892* #	US-PATENT-CLASS-318-183	c 33	N75-19524* #
US-PATENT-CLASS-315-108	c 36	N78-17366* #	US-PATENT-CLASS-317-140	c 09	N70-34502* #	US-PATENT-CLASS-318-200 105	c 08	N71-27057* #
US-PATENT-CLASS-315-10	c 33	N74-21850* #	US-PATENT-CLASS-317-148 5	c 10	N71-23271* #	US-PATENT-CLASS-318-200	c 33	N78-10376* #
US-PATENT-CLASS-315-10	c 33	N75-26244* #	US-PATENT-CLASS-317-153	c 10	N71-26334* #	US-PATENT-CLASS-318-227	c 07	N71-33613* #
US-PATENT-CLASS-315-110	c 33	N77-21316* #	US-PATENT-CLASS-317-155 5	c 09	N71-29008* #	US-PATENT-CLASS-318-227	c 33	N75-1587



US-PATENT-CLASS-318-230	c 07	N71-33613*	US-PATENT-CLASS-321-12	c 10	N71-27366*	US-PATENT-CLASS-324-102	c 33	N75-19521* #
US-PATENT-CLASS-318-230	c 10	N73-32145* #	US-PATENT-CLASS-321-13	c 33	N77-14333* #	US-PATENT-CLASS-324-102	c 33	N79-11315* #
US-PATENT-CLASS-318-230	c 33	N75-15874* #	US-PATENT-CLASS-321-14	c 09	N72-22196* #	US-PATENT-CLASS-324-102	c 33	N79-14305* #
US-PATENT-CLASS-318-230	c 33	N78-10376* #	US-PATENT-CLASS-321-15	c 09	N72-22203* #	US-PATENT-CLASS-324-103	c 10	N71-27338* #
US-PATENT-CLASS-318-231	c 10	N73-32145* #	US-PATENT-CLASS-321-15	c 33	N75-19522* #	US-PATENT-CLASS-324-106	c 14	N70-38602* #
US-PATENT-CLASS-318-231	c 33	N75-15874* #	US-PATENT-CLASS-321-18	c 09	N72-22203* #	US-PATENT-CLASS-324-106	c 08	N71-29138* #
US-PATENT-CLASS-318-254	c 09	N71-25999* #	US-PATENT-CLASS-321-18	c 09	N72-25251* #	US-PATENT-CLASS-324-107	c 10	N71-27338* #
US-PATENT-CLASS-318-254	c 09	N73-32107* #	US-PATENT-CLASS-321-18	c 09	N72-25252* #	US-PATENT-CLASS-324-112	c 33	N79-14305* #
US-PATENT-CLASS-318-254	c 33	N77-26386* #	US-PATENT-CLASS-321-19	c 09	N72-22196* #	US-PATENT-CLASS-324-113	c 09	N70-41655* #
US-PATENT-CLASS-318-254	c 33	N81-20352* #	US-PATENT-CLASS-321-19	c 09	N72-25252* #	US-PATENT-CLASS-324-113	c 33	N75-19521* #
US-PATENT-CLASS-318-254	c 33	N82-26569* #	US-PATENT-CLASS-321-19	c 33	N77-10428* #	US-PATENT-CLASS-324-113	c 33	N79-11315* #
US-PATENT-CLASS-318-257	c 10	N71-18724* #	US-PATENT-CLASS-321-25	c 09	N72-22196* #	US-PATENT-CLASS-324-113	c 33	N79-14305* #
US-PATENT-CLASS-318-258	c 09	N71-26092* #	US-PATENT-CLASS-321-2	c 03	N69-21330* #	US-PATENT-CLASS-324-115	c 14	N71-26244* #
US-PATENT-CLASS-318-260	c 09	N70-38712* #	US-PATENT-CLASS-321-2	c 03	N69-25146* #	US-PATENT-CLASS-324-115	c 10	N72-20222* #
US-PATENT-CLASS-318-265	c 15	N71-24895* #	US-PATENT-CLASS-321-2	c 03	N71-12255* #	US-PATENT-CLASS-324-117	c 14	N71-23037* #
US-PATENT-CLASS-318-267	c 37	N77-27400* #	US-PATENT-CLASS-321-2	c 09	N71-23188* #	US-PATENT-CLASS-324-118	c 33	N74-17930* #
US-PATENT-CLASS-318-308	c 11	N72-20244* #	US-PATENT-CLASS-321-2	c 03	N71-23239* #	US-PATENT-CLASS-324-119	c 09	N72-11225* #
US-PATENT-CLASS-318-314	c 10	N71-20448* #	US-PATENT-CLASS-321-2	c 10	N71-26085* #	US-PATENT-CLASS-324-120	c 14	N71-19431* #
US-PATENT-CLASS-318-314	c 09	N75-24758* #	US-PATENT-CLASS-321-2	c 09	N72-22196* #	US-PATENT-CLASS-324-120	c 09	N71-23021* #
US-PATENT-CLASS-318-317	c 09	N71-28886* #	US-PATENT-CLASS-321-2	c 09	N72-22203* #	US-PATENT-CLASS-324-123C	c 33	N79-22373* #
US-PATENT-CLASS-318-318	c 09	N71-24805* #	US-PATENT-CLASS-321-2	c 03	N72-23048* #	US-PATENT-CLASS-324-123R	c 09	N72-11225* #
US-PATENT-CLASS-318-318	c 09	N75-24758* #	US-PATENT-CLASS-321-2	c 09	N72-25249* #	US-PATENT-CLASS-324-127	c 33	N79-18193* #
US-PATENT-CLASS-318-31	c 15	N71-28952* #	US-PATENT-CLASS-321-2	c 09	N72-25251* #	US-PATENT-CLASS-324-130	c 35	N78-28411* #
US-PATENT-CLASS-318-327	c 11	N72-20244* #	US-PATENT-CLASS-321-2	c 09	N72-25252* #	US-PATENT-CLASS-324-132	c 09	N71-13530* #
US-PATENT-CLASS-318-328	c 09	N73-32107* #	US-PATENT-CLASS-321-2	c 09	N72-25253* #	US-PATENT-CLASS-324-132	c 10	N72-20222* #
US-PATENT-CLASS-318-331	c 09	N71-28886* #	US-PATENT-CLASS-321-2	c 09	N72-25254* #	US-PATENT-CLASS-324-133	c 10	N71-27338* #
US-PATENT-CLASS-318-341	c 10	N73-32145* #	US-PATENT-CLASS-321-2	c 33	N74-11049* #	US-PATENT-CLASS-324-133	c 33	N79-10337* #
US-PATENT-CLASS-318-341	c 09	N75-24758* #	US-PATENT-CLASS-321-2	c 33	N77-10428* #	US-PATENT-CLASS-324-133	c 33	N79-11315* #
US-PATENT-CLASS-318-345	c 09	N71-28886* #	US-PATENT-CLASS-321-45C	c 10	N73-26228* #	US-PATENT-CLASS-324-133	c 33	N79-14305* #
US-PATENT-CLASS-318-376	c 10	N71-16030* #	US-PATENT-CLASS-321-45ER	c 09	N72-25252* #	US-PATENT-CLASS-324-133	c 33	N79-18193* #
US-PATENT-CLASS-318-376	c 11	N72-20244* #	US-PATENT-CLASS-321-45R	c 09	N72-25252* #	US-PATENT-CLASS-324-158D	c 15	N72-25457* #
US-PATENT-CLASS-318-382	c 15	N71-24695* #	US-PATENT-CLASS-321-45R	c 09	N72-25254* #	US-PATENT-CLASS-324-158D	c 76	N76-20994* #
US-PATENT-CLASS-318-439	c 33	N81-20352* #	US-PATENT-CLASS-321-45R	c 33	N74-22864* #	US-PATENT-CLASS-324-158R	c 44	N80-18551* #
US-PATENT-CLASS-318-468	c 37	N77-27400* #	US-PATENT-CLASS-321-45S	c 33	N74-11049* #	US-PATENT-CLASS-324-158R	c 76	N76-20994* #
US-PATENT-CLASS-318-470	c 37	N77-27400* #	US-PATENT-CLASS-321-45	c 09	N71-24800* #	US-PATENT-CLASS-324-158T	c 15	N72-25457* #
US-PATENT-CLASS-318-489	c 02	N73-19004* #	US-PATENT-CLASS-321-45	c 09	N72-22203* #	US-PATENT-CLASS-324-158T	c 35	N75-12270* #
US-PATENT-CLASS-318-504	c 09	N71-28886* #	US-PATENT-CLASS-321-47	c 09	N71-33109* #	US-PATENT-CLASS-324-158T	c 76	N76-20994* #
US-PATENT-CLASS-318-561	c 33	N82-18493* #	US-PATENT-CLASS-321-47	c 09	N72-25253* #	US-PATENT-CLASS-324-158T	c 33	N80-14332* #
US-PATENT-CLASS-318-564	c 60	N82-29013* #	US-PATENT-CLASS-321-48	c 12	N71-20896* #	US-PATENT-CLASS-324-158T	c 09	N69-21926* #
US-PATENT-CLASS-318-571	c 10	N71-27136* #	US-PATENT-CLASS-321-5	c 08	N71-18752* #	US-PATENT-CLASS-324-163	c 35	N77-30436* #
US-PATENT-CLASS-318-573	c 35	N79-14348* #	US-PATENT-CLASS-321-60	c 14	N71-23174* #	US-PATENT-CLASS-324-165	c 35	N77-30436* #
US-PATENT-CLASS-318-576	c 09	N72-21246* #	US-PATENT-CLASS-321-61	c 09	N71-27364* #	US-PATENT-CLASS-324-173	c 35	N78-32396* #
US-PATENT-CLASS-318-580	c 08	N74-10942* #	US-PATENT-CLASS-321-61	c 09	N71-27364* #	US-PATENT-CLASS-324-173	c 35	N77-30436* #
US-PATENT-CLASS-318-580	c 04	N82-23231* #	US-PATENT-CLASS-321-69	c 10	N71-26414* #	US-PATENT-CLASS-324-181	c 09	N71-24717* #
US-PATENT-CLASS-318-584	c 08	N81-24106* #	US-PATENT-CLASS-321-8R	c 35	N74-18090* #	US-PATENT-CLASS-324-186	c 09	N72-25257* #
US-PATENT-CLASS-318-585	c 08	N79-23097* #	US-PATENT-CLASS-321-9	c 10	N71-25139* #	US-PATENT-CLASS-324-186	c 52	N74-12778* #
US-PATENT-CLASS-318-594	c 35	N79-14348* #	US-PATENT-CLASS-322-2	c 03	N72-23048* #	US-PATENT-CLASS-324-20R	c 09	N72-23172* #
US-PATENT-CLASS-318-599	c 10	N71-24861* #	US-PATENT-CLASS-322-32	c 09	N71-27364* #	US-PATENT-CLASS-324-20R	c 44	N79-12541* #
US-PATENT-CLASS-318-602	c 33	N74-29556* #	US-PATENT-CLASS-322-96	c 33	N77-26387* #	US-PATENT-CLASS-324-207	c 35	N78-32396* #
US-PATENT-CLASS-318-603	c 33	N74-29556* #	US-PATENT-CLASS-323-DIG 1	c 09	N72-21243* #	US-PATENT-CLASS-324-22	c 44	N79-12541* #
US-PATENT-CLASS-318-608	c 33	N75-13139* #	US-PATENT-CLASS-323-DIG 1	c 09	N72-25249* #	US-PATENT-CLASS-324-249	c 35	N78-32397* #
US-PATENT-CLASS-318-616	c 08	N79-23097* #	US-PATENT-CLASS-323-DIG 1	c 33	N74-11049* #	US-PATENT-CLASS-324-29.5	c 03	N72-25020* #
US-PATENT-CLASS-318-620	c 33	N82-18493* #	US-PATENT-CLASS-323-DIG 1	c 33	N77-10428* #	US-PATENT-CLASS-324-29.5	c 14	N73-30388* #
US-PATENT-CLASS-318-621	c 33	N82-18493* #	US-PATENT-CLASS-323-106	c 33	N74-22885* #	US-PATENT-CLASS-324-29.5	c 44	N74-27519* #
US-PATENT-CLASS-318-622	c 33	N82-18493* #	US-PATENT-CLASS-323-122	c 33	N74-22885* #	US-PATENT-CLASS-324-30B	c 33	N76-19339* #
US-PATENT-CLASS-318-628	c 08	N74-10942* #	US-PATENT-CLASS-323-128	c 33	N74-22885* #	US-PATENT-CLASS-324-30B	c 14	N73-20478* #
US-PATENT-CLASS-318-640	c 33	N75-13139* #	US-PATENT-CLASS-323-15	c 20	N79-20179* #	US-PATENT-CLASS-324-32	c 14	N71-16014* #
US-PATENT-CLASS-318-640	c 54	N75-27758* #	US-PATENT-CLASS-323-15	c 44	N80-14472* #	US-PATENT-CLASS-324-32	c 33	N75-18477* #
US-PATENT-CLASS-318-640	c 35	N79-14348* #	US-PATENT-CLASS-323-17	c 09	N72-25249* #	US-PATENT-CLASS-324-32	c 33	N75-19522* #
US-PATENT-CLASS-318-640	c 37	N81-27519* #	US-PATENT-CLASS-323-17	c 33	N77-10428* #	US-PATENT-CLASS-324-32	c 35	N78-28411* #
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US-PATENT-CLASS-325-113	c 07	N71-24840* #	US-PATENT-CLASS-325-4	c 09	N72-22202* #	US-PATENT-CLASS-326-168	c 33	N82-24417* #
US-PATENT-CLASS-325-113	c 07	N73-25160* #	US-PATENT-CLASS-325-4	c 07	N71-16088* #	US-PATENT-CLASS-326-171	c 32	N74-19788* #
US-PATENT-CLASS-325-113	c 52	N74-26625* #	US-PATENT-CLASS-325-4	c 07	N71-19773* #	US-PATENT-CLASS-326-172	c 10	N72-20223* #
US-PATENT-CLASS-325-114	c 07	N72-25171* #	US-PATENT-CLASS-325-4	c 07	N71-24621* #	US-PATENT-CLASS-326-172	c 10	N71-24844* #
US-PATENT-CLASS-325-114	c 03	N76-32140* #	US-PATENT-CLASS-325-4	c 07	N72-11149* #	US-PATENT-CLASS-326-172	c 32	N74-19788* #
US-PATENT-CLASS-325-115	c 03	N76-32140* #	US-PATENT-CLASS-325-4	c 07	N72-12080* #	US-PATENT-CLASS-326-172	c 33	N78-17294* #
US-PATENT-CLASS-325-118	c 17	N78-17140* #	US-PATENT-CLASS-325-4	c 07	N72-20140* #	US-PATENT-CLASS-326-172	c 09	N72-17157* #
US-PATENT-CLASS-325-12	c 07	N73-20174* #	US-PATENT-CLASS-325-4	c 07	N72-25171* #	US-PATENT-CLASS-326-172	c 10	N73-20254* #
US-PATENT-CLASS-325-139	c 07	N73-25160* #	US-PATENT-CLASS-325-4	c 07	N73-20174* #	US-PATENT-CLASS-326-172	c 14	N72-27408* #
US-PATENT-CLASS-325-13	c 07	N72-12081* #	US-PATENT-CLASS-325-4	c 15	N75-13007* #	US-PATENT-CLASS-326-172	c 33	N76-14371* #
US-PATENT-CLASS-325-141	c 07	N72-25173* #	US-PATENT-CLASS-325-4	c 32	N75-26195* #	US-PATENT-CLASS-326-172	c 60	N81-15706* #
US-PATENT-CLASS-325-141	c 52	N74-26625* #	US-PATENT-CLASS-325-4	c 32	N77-20289* #	US-PATENT-CLASS-326-1	c 23	



US-PATENT-CLASS-328-207	c 09	N71-28468*	US-PATENT-CLASS-33-268	c 89	N74-30886*	US-PATENT-CLASS-330-61	c 09	N71-23097*
US-PATENT-CLASS-328-207	c 10	N71-28860*	US-PATENT-CLASS-33-285	c 36	N74-21091*	US-PATENT-CLASS-330-63	c 33	N75-30428*
US-PATENT-CLASS-328-207	c 09	N71-29139*	US-PATENT-CLASS-33-286	c 18	N76-14186*	US-PATENT-CLASS-330-69	c 33	N74-32712*
US-PATENT-CLASS-328-207	c 10	N72-20221*	US-PATENT-CLASS-33-31	c 14	N71-21079*	US-PATENT-CLASS-330-69	c 33	N75-19518*
US-PATENT-CLASS-328-20	c 10	N72-20223*	US-PATENT-CLASS-33-356	c 04	N76-20114*	US-PATENT-CLASS-330-6	c 35	N75-13213*
US-PATENT-CLASS-328-233	c 10	N71-22962*	US-PATENT-CLASS-33-356	c 04	N77-19056*	US-PATENT-CLASS-330-70CR	c 10	N73-27171*
US-PATENT-CLASS-328-233	c 75	N75-13625*	US-PATENT-CLASS-33-366	c 35	N78-32395*	US-PATENT-CLASS-330-70R	c 09	N72-21245*
US-PATENT-CLASS-328-233	c 37	N78-17386*	US-PATENT-CLASS-33-46R	c 19	N74-21015*	US-PATENT-CLASS-330-80T	c 09	N73-20232*
US-PATENT-CLASS-328-24	c 09	N72-33204*	US-PATENT-CLASS-33-72	c 15	N72-11386*	US-PATENT-CLASS-330-85	c 09	N72-21245*
US-PATENT-CLASS-328-37	c 08	N71-12503*	US-PATENT-CLASS-33-75R	c 14	N72-28436*	US-PATENT-CLASS-330-86	c 09	N73-20231*
US-PATENT-CLASS-328-37	c 10	N73-20254*	US-PATENT-CLASS-33-96	c 33	N75-30430*	US-PATENT-CLASS-330-86	c 33	N75-19518*
US-PATENT-CLASS-328-37	c 33	N76-14373*	US-PATENT-CLASS-330-103	c 32	N74-22096*	US-PATENT-CLASS-330-86	c 33	N79-22373*
US-PATENT-CLASS-328-37	c 33	N81-17349*	US-PATENT-CLASS-330-107	c 10	N72-11256*	US-PATENT-CLASS-330-86	c 33	N81-24338*
US-PATENT-CLASS-328-38	c 10	N72-20223*	US-PATENT-CLASS-330-107	c 10	N72-17172*	US-PATENT-CLASS-330-86	c 10	N72-17172*
US-PATENT-CLASS-328-38	c 33	N77-24375*	US-PATENT-CLASS-330-109	c 10	N72-17171*	US-PATENT-CLASS-330-94	c 33	N74-14939*
US-PATENT-CLASS-328-39	c 33	N77-24375*	US-PATENT-CLASS-330-109	c 10	N72-17172*	US-PATENT-CLASS-330-94	c 36	N75-30524*
US-PATENT-CLASS-328-4-8	c 33	N77-24375*	US-PATENT-CLASS-330-109	c 09	N73-20231*	US-PATENT-CLASS-331-DIG 1	c 33	N81-33405*
US-PATENT-CLASS-328-41	c 33	N75-31330*	US-PATENT-CLASS-330-109	c 33	N82-24417*	US-PATENT-CLASS-331-DIG 2	c 33	N74-10194*
US-PATENT-CLASS-328-42	c 08	N71-19432*	US-PATENT-CLASS-330-11	c 33	N74-14939*	US-PATENT-CLASS-331-1A	c 33	N75-25040*
US-PATENT-CLASS-328-44	c 08	N71-29034*	US-PATENT-CLASS-330-11	c 09	N71-13531*	US-PATENT-CLASS-331-1A	c 33	N79-11313*
US-PATENT-CLASS-328-48	c 14	N73-30386*	US-PATENT-CLASS-330-11	c 10	N71-33129*	US-PATENT-CLASS-331-107A	c 71	N77-26919*
US-PATENT-CLASS-328-48	c 33	N74-10223*	US-PATENT-CLASS-330-11	c 09	N72-17156*	US-PATENT-CLASS-331-107G	c 26	N72-25679*
US-PATENT-CLASS-328-48	c 60	N81-15706*	US-PATENT-CLASS-330-124	c 07	N71-28430*	US-PATENT-CLASS-331-107G	c 09	N73-15235*
US-PATENT-CLASS-328-49	c 10	N71-27137*	US-PATENT-CLASS-330-12	c 10	N72-33230*	US-PATENT-CLASS-331-107	c 09	N71-18721*
US-PATENT-CLASS-328-55	c 33	N81-17349*	US-PATENT-CLASS-330-13	c 10	N71-26415*	US-PATENT-CLASS-331-107	c 26	N72-21701*
US-PATENT-CLASS-328-58	c 08	N71-29138*	US-PATENT-CLASS-330-13	c 33	N75-30428*	US-PATENT-CLASS-331-108A	c 33	N74-20862*
US-PATENT-CLASS-328-58	c 33	N74-32711*	US-PATENT-CLASS-330-14	c 09	N70-35440*	US-PATENT-CLASS-331-109	c 10	N71-27271*
US-PATENT-CLASS-328-58	c 33	N75-18479*	US-PATENT-CLASS-330-14	c 33	N77-14335*	US-PATENT-CLASS-331-109	c 33	N74-26732*
US-PATENT-CLASS-328-59	c 33	N75-19515*	US-PATENT-CLASS-330-16	c 10	N71-33129*	US-PATENT-CLASS-331-10	c 07	N72-11150*
US-PATENT-CLASS-328-61	c 09	N71-23525*	US-PATENT-CLASS-330-176	c 10	N72-17171*	US-PATENT-CLASS-331-111	c 10	N71-23669*
US-PATENT-CLASS-328-61	c 10	N73-20254*	US-PATENT-CLASS-330-18	c 09	N72-17155*	US-PATENT-CLASS-331-111	c 09	N72-21247*
US-PATENT-CLASS-328-61	c 35	N75-30504*	US-PATENT-CLASS-330-18	c 33	N75-30428*	US-PATENT-CLASS-331-113A	c 09	N72-25253*
US-PATENT-CLASS-328-62	c 35	N75-30504*	US-PATENT-CLASS-330-200	c 07	N71-28430*	US-PATENT-CLASS-331-113A	c 09	N72-25254*
US-PATENT-CLASS-328-63	c 33	N76-14371*	US-PATENT-CLASS-330-207A	c 33	N75-30429*	US-PATENT-CLASS-331-113A	c 33	N74-11049*
US-PATENT-CLASS-328-63	c 33	N77-24375*	US-PATENT-CLASS-330-20	c 09	N73-20232*	US-PATENT-CLASS-331-113R	c 33	N82-18494*
US-PATENT-CLASS-328-67	c 10	N71-28960*	US-PATENT-CLASS-330-22	c 09	N71-10798*	US-PATENT-CLASS-331-113	c 09	N70-38995*
US-PATENT-CLASS-328-67	c 33	N82-24418*	US-PATENT-CLASS-330-22	c 09	N73-20232*	US-PATENT-CLASS-331-113	c 10	N71-19418*
US-PATENT-CLASS-328-71	c 60	N81-15706*	US-PATENT-CLASS-330-24	c 10	N71-33129*	US-PATENT-CLASS-331-113	c 09	N71-19470*
US-PATENT-CLASS-328-92	c 10	N71-28860*	US-PATENT-CLASS-330-24	c 33	N75-30429*	US-PATENT-CLASS-331-113	c 10	N71-25882*
US-PATENT-CLASS-329-104	c 07	N71-11282*	US-PATENT-CLASS-330-26	c 10	N72-17172*	US-PATENT-CLASS-331-113	c 10	N71-25950*
US-PATENT-CLASS-329-104	c 33	N74-12887*	US-PATENT-CLASS-330-27R	c 10	N72-31273*	US-PATENT-CLASS-331-113	c 09	N71-28810*
US-PATENT-CLASS-329-104	c 32	N77-24331*	US-PATENT-CLASS-330-28	c 33	N74-21851*	US-PATENT-CLASS-331-114	c 33	N77-17351*
US-PATENT-CLASS-329-107	c 35	N81-19427*	US-PATENT-CLASS-330-28	c 33	N77-14335*	US-PATENT-CLASS-331-115	c 10	N72-32303*
US-PATENT-CLASS-329-119	c 33	N77-21314*	US-PATENT-CLASS-330-290	c 33	N82-24417*	US-PATENT-CLASS-331-115	c 33	N74-20862*
US-PATENT-CLASS-329-120	c 07	N73-30113*	US-PATENT-CLASS-330-294	c 33	N82-24417*	US-PATENT-CLASS-331-116R	c 10	N72-33230*
US-PATENT-CLASS-329-122	c 10	N71-19469*	US-PATENT-CLASS-330-29	c 09	N69-24330*	US-PATENT-CLASS-331-116R	c 33	N74-20862*
US-PATENT-CLASS-329-122	c 07	N73-28012*	US-PATENT-CLASS-330-29	c 10	N72-28241*	US-PATENT-CLASS-331-117R	c 33	N74-26732*
US-PATENT-CLASS-329-122	c 33	N74-12887*	US-PATENT-CLASS-330-2	c 09	N69-39986*	US-PATENT-CLASS-331-117	c 10	N71-27271*
US-PATENT-CLASS-329-122	c 32	N74-20811*	US-PATENT-CLASS-330-2	c 09	N72-25250*	US-PATENT-CLASS-331-117	c 09	N72-22203*
US-PATENT-CLASS-329-122	c 33	N77-14334*	US-PATENT-CLASS-330-2	c 33	N78-10375*	US-PATENT-CLASS-331-12	c 33	N78-32338*
US-PATENT-CLASS-329-122	c 32	N77-24331*	US-PATENT-CLASS-330-2	c 33	N79-22373*	US-PATENT-CLASS-331-135	c 10	N73-32145*
US-PATENT-CLASS-329-122	c 32	N79-14267*	US-PATENT-CLASS-330-30D	c 10	N72-20221*	US-PATENT-CLASS-331-14	c 09	N72-21247*
US-PATENT-CLASS-329-122	c 33	N81-33405*	US-PATENT-CLASS-330-30D	c 09	N73-20232*	US-PATENT-CLASS-331-14	c 33	N74-10194*
US-PATENT-CLASS-329-124	c 33	N77-14334*	US-PATENT-CLASS-330-306	c 33	N82-24417*	US-PATENT-CLASS-331-14	c 33	N79-11313*
US-PATENT-CLASS-329-124	c 33	N78-32338*	US-PATENT-CLASS-330-30	c 09	N71-19466*	US-PATENT-CLASS-331-159	c 33	N74-20862*
US-PATENT-CLASS-329-126	c 33	N74-12887*	US-PATENT-CLASS-330-30	c 09	N71-19516*	US-PATENT-CLASS-331-177R	c 09	N75-15235*
US-PATENT-CLASS-329-140	c 07	N71-24583*	US-PATENT-CLASS-330-30	c 09	N71-27016*	US-PATENT-CLASS-331-177V	c 33	N77-17351*
US-PATENT-CLASS-329-145	c 07	N71-33696*	US-PATENT-CLASS-330-31	c 10	N71-26331*	US-PATENT-CLASS-331-177	c 10	N71-27271*
US-PATENT-CLASS-329-161	c 07	N72-20141*	US-PATENT-CLASS-330-31	c 10	N72-17172*	US-PATENT-CLASS-331-178	c 33	N74-10194*
US-PATENT-CLASS-329-162	c 07	N72-20141*	US-PATENT-CLASS-330-35	c 09	N72-17156*	US-PATENT-CLASS-331-17	c 10	N71-20852*
US-PATENT-CLASS-329-166	c 33	N75-19520*	US-PATENT-CLASS-330-35	c 09	N73-20232*	US-PATENT-CLASS-331-17	c 10	N73-27171*
US-PATENT-CLASS-329-166	c 33	N75-25041*	US-PATENT-CLASS-330-35	c 33	N74-14939*	US-PATENT-CLASS-331-17	c 33	N74-10194*
US-PATENT-CLASS-329-204	c 33	N75-19520*	US-PATENT-CLASS-330-4-3	c 16	N73-32391*	US-PATENT-CLASS-331-183	c 33	N74-26732*
US-PATENT-CLASS-329-204	c 33	N75-25041*	US-PATENT-CLASS-330-4-3	c 36	N75-19655*	US-PATENT-CLASS-331-18	c 10	N71-26374*
US-PATENT-CLASS-329-205	c 33	N77-21314*	US-PATENT-CLASS-330-4-3	c 36	N75-27364*	US-PATENT-CLASS-331-18	c 33	N74-10194*
US-PATENT-CLASS-329-50	c 33	N74-17930*	US-PATENT-CLASS-330-4-3	c 36	N75-32441*	US-PATENT-CLASS-331-18	c 33	N75-25040*
US-PATENT-CLASS-329-50	c 35	N81-19427*	US-PATENT-CLASS-330-4-3	c 36	N76-29575*	US-PATENT-CLASS-331-23	c 09	N72-21247*
US-PATENT-CLASS-33-8UB	c 27	N81-15104*	US-PATENT-CLASS-330-4-3	c 36	N77-25502*	US-PATENT-CLASS-331-23	c 33	N77-14334*
US-PATENT-CLASS-33-DIG.13	c 35	N75-12273*	US-PATENT-CLASS-330-4-3	c 73	N78-19920*	US-PATENT-CLASS-331-23	c 33	N79-11313*
US-PATENT-CLASS-33-IG	c 37	N76-21554*	US-PATENT-CLASS-330-4-3	c 36	N82-28616*	US-PATENT-CLASS-331-25	c 10	N73-27171*
US-PATENT-CLASS-33-1M	c 35	N74-32877*	US-PATENT-CLASS-330-4-5	c 09	N72-25258*	US-PATENT-CLASS-331-25	c 33	N75-25040*
US-PATENT-CLASS-33-1N	c 43	N79-26439*	US-PATENT-CLASS-330-4-9	c 33	N74-32660*	US-PATENT-CLASS-331-27	c 33	N79-11313*
US-PATENT-CLASS-33-1Q	c 43	N79-26439*	US-PATENT-CLASS-330-40	c 07	N71-28430*	US-PATENT-CLASS-331-30	c 09	N72-21247*
US-PATENT-CLASS-33-1SA	c 14	N72-28436*	US-PATENT-CLASS-330-40	c 09	N72-17155*	US-PATENT-CLASS-331-34	c 07	N72-11150*
US-PATENT-CLASS-33-1SA	c 19	N74-21015*	US-PATENT-CLASS-330-40	c 09	N73-20232*	US-PATENT-CLASS-331-36C	c 33	N77-14334*
US-PATENT-CLASS-33-125R	c 52	N80-27072*	US-PATENT-CLASS-330-40	c 33	N75-30428*	US-PATENT-CLASS-331-3	c 35	N76-15436*
US-PATENT-CLASS-33-125	c 14	N72-11364*	US-PATENT-CLASS-330-43	c 33	N79-10339*	US-PATENT-CLASS-331-44	c 14	N72-27408*
US-PATENT-CLASS-33-143C	c 52	N82-22875*	US-PATENT-CLASS-330-43	c 33	N82-26568*	US-PATENT-CLASS-331-45	c 10	N73-16206*
US-PATENT-CLASS-33-147	c 15	N71-19489*	US-PATENT-CLASS-330-49	c 14	N70-35220*	US-PATENT-CLASS-331-48	c 33	N81-17349*
US-PATENT-CLASS-33-148D	c 35	N75-19615*	US-PATENT-CLASS-330-4	c 16	N71-15550*	US-PATENT-CLASS-331-4	c 09	N69-21543*
US-PATENT-CLASS-33-149	c 14	N71-17657*	US-PATENT-CLASS-330-4	c 16	N71-24831*	US-PATENT-CLASS-331-4	c 33	N74-10194*
US-PATENT-CLASS-33-15A	c 08	N72-11172*	US-PATENT-CLASS-330-4	c 16	N72-28521*	US-PATENT-CLASS-331-4	c 33	N78-32338*
US-PATENT-CLASS-33-155R	c 33	N76-19338*	US-PATENT-CLASS-330-4	c 36	N75-15029*	US-PATENT-CLASS-331-62	c 33	N74-11049*
US-PATENT-CLASS-33-174B	c 37	N76-21554*	US-PATENT-CLASS-330-4	c 36	N76-31512*	US-PATENT-CLASS-331-64	c 33	N78-32338*
US-PATENT-CLASS-33-174D	c 33	N76-19338*	US-PATENT-CLASS-330-4	c 36	N78-18410*	US-PATENT-CLASS-331-65	c 35	N75-29380*
US-PATENT-CLASS-33-174L	c 43	N79-26439*	US-PATENT-CLASS-330-4	c 36	N80-18372*	US-PATENT-CLASS-331-65	c 33	N80-23559*
US-PATENT-CLASS-33-174S	c 14	N72-22445*	US-PATENT-CLASS-330-5-5	c 71	N77-26919*	US-PATENT-CLASS-331-66	c 07	N72-11150*
US-PATENT-CLASS-33-174S	c 14	N69-21363*	US-PATENT-CLASS-330-51	c 10	N71-28859*	US-PATENT-CLASS-331-78	c 09	N71-23598*
US-PATENT-CLASS-33-174	c 14	N71-17658*	US-PATENT-CLASS-330-51	c 33	N79-22373*	US-PATENT-CLASS-331-78	c 08	N73-12175*
US-PATENT-CLASS-33-174	c 14	N71-24693*	US-PATENT-CLASS-330-52	c 71	N78-14867*	US-PATENT-CLASS-331-7	c 07	N72-11150*
US-PATENT-CLASS-33-180R	c 35	N75-12273*	US-PATENT-CLASS-330-52	c 33	N74-32660*	US-PATENT-CLASS-331-90	c 09	N73-15235*
US-PATENT-CLASS-33-189	c 15	N71-26145*	US-PATENT-CLASS-330-59	c 09	N72-25250*	US-PATENT-CLASS-331-94-5A	c 16	N73-33397*
US-PATENT-CLASS-33-1	c 14	N70-36907*	US-PATENT-CLASS-330-59	c 33	N74-21851*	US-PATENT-CLASS-331-94-5A	c 36	N75-27364*
US-PATENT-CLASS-33-204C	c 08	N72-11172*	US-PATENT-CLASS-330-59	c 33	N77-14335*	US-PATENT-CLASS-331-94-5C	c 36	N75-31427*
US-PATENT-CLASS-33-207	c 15	N71-15571*	US-PATENT-CLASS-330-59	c 33	N75-27251*	US-PATENT-CLASS-331-94-5C	c 36	N76-18428*
US-PATENT-CLASS-33-23R	c 35	N74-32877*	US-PATENT-CLASS-330-5					



US-PATENT-CLASS-331-94 5C	c 36	N76-24553* #	US-PATENT-CLASS-333-18	c 32	N76-21366* #	US-PATENT-CLASS-338-25	c 35	N82-24470* #
US-PATENT-CLASS-331-94 5C	c 36	N76-29575* #	US-PATENT-CLASS-333-204	c 33	N81-17348* #	US-PATENT-CLASS-338-275	c 35	N82-24470* #
US-PATENT-CLASS-331-94 5C	c 36	N80-14384* #	US-PATENT-CLASS-333-20	c 33	N82-24418* #	US-PATENT-CLASS-338-283	c 24	N75-30260* #
US-PATENT-CLASS-331-94 5C	c 36	N82-13415* #	US-PATENT-CLASS-333-21A	c 07	N71-33606* #	US-PATENT-CLASS-338-28	c 35	N77-20400* #
US-PATENT-CLASS-331-94 5D	c 33	N74-20859* #	US-PATENT-CLASS-333-21R	c 33	N75-30430* #	US-PATENT-CLASS-338-28	c 35	N77-24454* #
US-PATENT-CLASS-331-94 5D	c 36	N77-19416* #	US-PATENT-CLASS-333-21	c 07	N71-10676* #	US-PATENT-CLASS-338-28	c 35	N82-24470* #
US-PATENT-CLASS-331-94 5D	c 36	N77-25502* #	US-PATENT-CLASS-333-24R	c 09	N72-29172* #	US-PATENT-CLASS-338-2	c 33	N75-13129* #
US-PATENT-CLASS-331-94 5D	c 35	N77-27366* #	US-PATENT-CLASS-333-24R	c 36	N80-18372* #	US-PATENT-CLASS-338-2	c 35	N80-20560* #
US-PATENT-CLASS-331-94 5D	c 36	N82-13415* #	US-PATENT-CLASS-333-246	c 33	N82-16340* #	US-PATENT-CLASS-338-32S	c 52	N80-27072* #
US-PATENT-CLASS-331-94 5G	c 36	N75-31426* #	US-PATENT-CLASS-333-252	c 32	N80-32605* #	US-PATENT-CLASS-338-32S	c 33	N78-13320* #
US-PATENT-CLASS-331-94 5G	c 36	N77-19416* #	US-PATENT-CLASS-333-262	c 33	N80-18265* #	US-PATENT-CLASS-338-326	c 33	N74-14935* #
US-PATENT-CLASS-331-94 5G	c 36	N78-17366* #	US-PATENT-CLASS-333-30	c 10	N71-25900* #	US-PATENT-CLASS-338-5	c 35	N78-17359* #
US-PATENT-CLASS-331-94 5G	c 36	N78-27402* #	US-PATENT-CLASS-333-6	c 07	N71-33606* #	US-PATENT-CLASS-338-5	c 32	N71-15974* #
US-PATENT-CLASS-331-94 5G	c 36	N79-18307* #	US-PATENT-CLASS-333-70CR	c 10	N72-17171* #	US-PATENT-CLASS-338-64	c 52	N74-27864* #
US-PATENT-CLASS-331-94 5K	c 33	N82-24418* #	US-PATENT-CLASS-333-70R	c 10	N72-17171* #	US-PATENT-CLASS-338-64	c 09	N71-21583* #
US-PATENT-CLASS-331-94 5L	c 36	N74-15145* #	US-PATENT-CLASS-333-72	c 32	N77-18307* #	US-PATENT-CLASS-338-6	c 35	N76-14430* #
US-PATENT-CLASS-331-94 5M	c 72	N79-13826* #	US-PATENT-CLASS-333-72	c 10	N71-25900* #	US-PATENT-CLASS-338-6	c 09	N71-29133* #
US-PATENT-CLASS-331-94 5PE	c 36	N75-19654* #	US-PATENT-CLASS-333-72	c 71	N77-26919* #	US-PATENT-CLASS-338-7	c 52	N76-29895* #
US-PATENT-CLASS-331-94 5PE	c 36	N75-32441* #	US-PATENT-CLASS-333-73R	c 09	N73-26195* #	US-PATENT-CLASS-338-82	c 37	N75-13265* #
US-PATENT-CLASS-331-94 5PE	c 36	N77-19416* #	US-PATENT-CLASS-333-73S	c 09	N73-26195* #	US-PATENT-CLASS-338-89	c 09	N71-20842* #
US-PATENT-CLASS-331-94 5PE	c 36	N78-27402* #	US-PATENT-CLASS-333-73W	c 07	N72-20141* #	US-PATENT-CLASS-338-97	c 35	N74-32877* #
US-PATENT-CLASS-331-94 5PE	c 72	N79-13826* #	US-PATENT-CLASS-333-73	c 07	N69-24323* #	US-PATENT-CLASS-338-99	c 37	N75-13265* #
US-PATENT-CLASS-331-94 5PE	c 33	N82-24418* #	US-PATENT-CLASS-333-73	c 09	N71-23573* #	US-PATENT-CLASS-339-143C	c 35	N78-17359* #
US-PATENT-CLASS-331-94 5P	c 36	N75-19655* #	US-PATENT-CLASS-333-75	c 32	N77-18307* #	US-PATENT-CLASS-339-143R	c 33	N76-16332* #
US-PATENT-CLASS-331-94 5P	c 36	N75-31426* #	US-PATENT-CLASS-333-76	c 32	N77-18307* #	US-PATENT-CLASS-339-147R	c 09	N72-25256* #
US-PATENT-CLASS-331-94 5P	c 36	N77-25502* #	US-PATENT-CLASS-333-79	c 10	N70-41964* #	US-PATENT-CLASS-339-150	c 09	N69-21470* #
US-PATENT-CLASS-331-94 5P	c 36	N78-27402* #	US-PATENT-CLASS-333-79	c 09	N72-25256* #	US-PATENT-CLASS-339-17M	c 37	N76-27567* #
US-PATENT-CLASS-331-94 5P	c 72	N79-13826* #	US-PATENT-CLASS-333-7	c 07	N71-33606* #	US-PATENT-CLASS-339-17R	c 15	N71-29133* #
US-PATENT-CLASS-331-94 5P	c 36	N79-18307* #	US-PATENT-CLASS-333-7	c 07	N72-25170* #	US-PATENT-CLASS-339-176MF	c 09	N72-28225* #
US-PATENT-CLASS-331-94 5P	c 36	N80-14384* #	US-PATENT-CLASS-333-80R	c 33	N74-32712* #	US-PATENT-CLASS-339-176M	c 15	N72-17455* #
US-PATENT-CLASS-331-94 5P	c 36	N82-13415* #	US-PATENT-CLASS-333-80T	c 10	N72-33230* #	US-PATENT-CLASS-339-176	c 09	N70-34596* #
US-PATENT-CLASS-331-94 5S	c 36	N74-15145* #	US-PATENT-CLASS-333-80	c 09	N71-12517* #	US-PATENT-CLASS-339-176	c 09	N70-36494* #
US-PATENT-CLASS-331-94 5S	c 36	N77-25499* #	US-PATENT-CLASS-333-81B	c 09	N72-12145* #	US-PATENT-CLASS-339-177	c 09	N71-20851* #
US-PATENT-CLASS-331-94 5S	c 35	N77-27366* #	US-PATENT-CLASS-333-81B	c 14	N73-13420* #	US-PATENT-CLASS-339-17	c 15	N69-27431* #
US-PATENT-CLASS-331-94 5S	c 36	N78-17366* #	US-PATENT-CLASS-333-81R	c 07	N72-25170* #	US-PATENT-CLASS-339-17	c 14	N71-17685* #
US-PATENT-CLASS-331-94 5S	c 16	N71-18614* #	US-PATENT-CLASS-333-81R	c 33	N78-2340* #	US-PATENT-CLASS-339-17	c 09	N71-26133* #
US-PATENT-CLASS-331-94 5S	c 16	N71-24832* #	US-PATENT-CLASS-333-81R	c 32	N80-14281* #	US-PATENT-CLASS-339-18C	c 37	N76-27567* #
US-PATENT-CLASS-331-94 5S	c 23	N71-26722* #	US-PATENT-CLASS-333-81	c 07	N71-29065* #	US-PATENT-CLASS-339-19BR	c 33	N76-16332* #
US-PATENT-CLASS-331-94 5S	c 15	N71-27135* #	US-PATENT-CLASS-333-82A	c 09	N73-26195* #	US-PATENT-CLASS-339-218M	c 09	N72-28225* #
US-PATENT-CLASS-331-94 5S	c 23	N71-29125* #	US-PATENT-CLASS-333-82B	c 32	N77-18307* #	US-PATENT-CLASS-339-242	c 33	N76-16332* #
US-PATENT-CLASS-331-94 5S	c 16	N71-33410* #	US-PATENT-CLASS-333-83BT	c 33	N75-30430* #	US-PATENT-CLASS-339-252R	c 52	N77-14738* #
US-PATENT-CLASS-331-94 5S	c 16	N72-12440* #	US-PATENT-CLASS-333-83R	c 36	N74-11313* #	US-PATENT-CLASS-339-275R	c 33	N76-16332* #
US-PATENT-CLASS-331-94 5S	c 25	N72-24753* #	US-PATENT-CLASS-333-83	c 09	N71-24841* #	US-PATENT-CLASS-339-275T	c 09	N72-20200* #
US-PATENT-CLASS-331-94 5S	c 16	N72-25485* #	US-PATENT-CLASS-333-84M	c 09	N73-26195* #	US-PATENT-CLASS-339-276T	c 09	N72-20200* #
US-PATENT-CLASS-331-94 5S	c 07	N72-26119* #	US-PATENT-CLASS-333-8	c 07	N69-24334* #	US-PATENT-CLASS-339-278M	c 15	N72-17455* #
US-PATENT-CLASS-331-94 5S	c 09	N73-32111* #	US-PATENT-CLASS-333-95	c 07	N71-27191* #	US-PATENT-CLASS-339-45M	c 15	N72-25450* #
US-PATENT-CLASS-331-94 5S	c 16	N73-32391* #	US-PATENT-CLASS-333-96	c 09	N71-20445* #	US-PATENT-CLASS-339-46	c 15	N72-17455* #
US-PATENT-CLASS-331-94 5S	c 36	N76-18427* #	US-PATENT-CLASS-333-96	c 07	N71-27191* #	US-PATENT-CLASS-339-5	c 15	N71-23049* #
US-PATENT-CLASS-331-94 5G	c 36	N75-32441* #	US-PATENT-CLASS-333-97R	c 36	N74-11313* #	US-PATENT-CLASS-339-75MP	c 09	N72-28225* #
US-PATENT-CLASS-331-94	c 16	N70-41578* #	US-PATENT-CLASS-333-97	c 07	N69-27462* #	US-PATENT-CLASS-339-91B	c 15	N72-25450* #
US-PATENT-CLASS-331-94	c 16	N72-28521* #	US-PATENT-CLASS-333-98P	c 07	N72-25170* #	US-PATENT-CLASS-339-91	c 09	N69-21927* #
US-PATENT-CLASS-331-94	c 16	N73-13489* #	US-PATENT-CLASS-333-98P	c 09	N72-29172* #	US-PATENT-CLASS-339-94M	c 09	N72-28225* #
US-PATENT-CLASS-331-94	c 35	N76-15436* #	US-PATENT-CLASS-333-98R	c 07	N72-25170* #	US-PATENT-CLASS-339-95	c 09	N69-39734* #
US-PATENT-CLASS-331-94	c 36	N76-31512* #	US-PATENT-CLASS-333-98R	c 09	N72-29172* #	US-PATENT-CLASS-339-12R	c 52	N77-25772* #
US-PATENT-CLASS-331-94	c 36	N79-14362* #	US-PATENT-CLASS-333-98R	c 14	N73-13420* #	US-PATENT-CLASS-34-155	c 14	N73-28489* #
US-PATENT-CLASS-331-94	c 36	N80-18372* #	US-PATENT-CLASS-333-98R	c 33	N75-30430* #	US-PATENT-CLASS-34-15	c 28	N78-24365* #
US-PATENT-CLASS-332-10	c 08	N71-29138* #	US-PATENT-CLASS-333-98S	c 07	N72-25170* #	US-PATENT-CLASS-34-160	c 14	N73-28489* #
US-PATENT-CLASS-332-11D	c 35	N74-17885* #	US-PATENT-CLASS-333-98	c 09	N71-23548* #	US-PATENT-CLASS-34-162	c 14	N73-28489* #
US-PATENT-CLASS-332-16	c 33	N77-21314* #	US-PATENT-CLASS-333-98	c 09	N71-24808* #	US-PATENT-CLASS-34-162	c 35	N74-15831* #
US-PATENT-CLASS-332-18	c 33	N77-17351* #	US-PATENT-CLASS-333-99S	c 32	N80-32605* #	US-PATENT-CLASS-340-12R	c 35	N74-16135* #
US-PATENT-CLASS-332-19	c 10	N71-23544* #	US-PATENT-CLASS-335-205	c 09	N72-20199* #	US-PATENT-CLASS-340-12R	c 46	N79-23555* #
US-PATENT-CLASS-332-1	c 10	N71-23084* #	US-PATENT-CLASS-335-216	c 16	N71-28554* #	US-PATENT-CLASS-340-146 1AL	c 08	N72-25210* #
US-PATENT-CLASS-332-21	c 08	N72-25208* #	US-PATENT-CLASS-335-216	c 23	N71-29049* #	US-PATENT-CLASS-340-146 1AL	c 08	N73-12175* #
US-PATENT-CLASS-332-22	c 32	N77-14292* #	US-PATENT-CLASS-335-216	c 26	N73-32571* #	US-PATENT-CLASS-340-146 1AL	c 32	N77-12240* #
US-PATENT-CLASS-332-22	c 33	N81-15192* #	US-PATENT-CLASS-335-216	c 20	N75-24897* #	US-PATENT-CLASS-340-146 1AQ	c 08	N73-12177* #
US-PATENT-CLASS-332-23R	c 32	N77-14292* #	US-PATENT-CLASS-335-216	c 33	N79-21264* #	US-PATENT-CLASS-340-146 1AQ	c 32	N74-32598* #
US-PATENT-CLASS-332-23R	c 33	N81-15192* #	US-PATENT-CLASS-335-229	c 33	N82-24421* #	US-PATENT-CLASS-340-146 1AQ	c 32	N77-12240* #
US-PATENT-CLASS-332-29	c 07	N71-28429* #	US-PATENT-CLASS-335-256	c 33	N82-11357* #	US-PATENT-CLASS-340-146 1AV	c 08	N73-12177* #
US-PATENT-CLASS-332-2	c 35	N75-19614* #	US-PATENT-CLASS-335-266	c 33	N82-11357* #	US-PATENT-CLASS-340-146 1AV	c 32	N77-12240* #
US-PATENT-CLASS-332-30V	c 33	N77-14334* #	US-PATENT-CLASS-335-266	c 33	N82-24421* #	US-PATENT-CLASS-340-146 1AX	c 32	N79-10263* #
US-PATENT-CLASS-332-30V	c 33	N77-17351* #	US-PATENT-CLASS-335-296	c 09	N73-30185* #	US-PATENT-CLASS-340-146 1C	c 07	N73-20176* #
US-PATENT-CLASS-332-30	c 10	N71-27271* #	US-PATENT-CLASS-335-297	c 09	N73-30185* #	US-PATENT-CLASS-340-146 1E	c 32	N79-10263* #
US-PATENT-CLASS-332-30	c 07	N71-28429* #	US-PATENT-CLASS-335-300	c 09	N70-41929* #	US-PATENT-CLASS-340-146 1	c 09	N71-18843* #
US-PATENT-CLASS-332-30	c 33	N77-21314* #	US-PATENT-CLASS-336-DIG 1	c 26	N73-26752* #	US-PATENT-CLASS-340-146 1	c 08	N71-22749* #
US-PATENT-CLASS-332-31	c 08	N71-12500* #	US-PATENT-CLASS-336-DIG 1	c 33	N79-17133* #	US-PATENT-CLASS-340-146 1	c 10	N71-26103* #
US-PATENT-CLASS-332-31	c 26	N72-21701* #	US-PATENT-CLASS-336-120	c 33	N82-24422* #	US-PATENT-CLASS-340-146 1	c 08	N71-27255* #
US-PATENT-CLASS-332-47	c 33	N75-19520* #	US-PATENT-CLASS-336-178	c 33	N82-24422* #	US-PATENT-CLASS-340-146 1	c 08	N72-22167* #
US-PATENT-CLASS-332-51W	c 07	N72-20141* #	US-PATENT-CLASS-336-198	c 09	N72-27226* #	US-PATENT-CLASS-340-146 1	c 08	N72-25207* #
US-PATENT-CLASS-332-52	c 33	N77-21314* #	US-PATENT-CLASS-336-200	c 26	N73-26752* #	US-PATENT-CLASS-340-146 1	c 07	N73-13149* #
US-PATENT-CLASS-332-7 51	c 16	N72-25485* #	US-PATENT-CLASS-336-210	c 33	N74-17928* #	US-PATENT-CLASS-340-146 2	c 08	N71-12505* #
US-PATENT-CLASS-332-7 51	c 07	N73-26119* #	US-PATENT-CLASS-336-220	c 09	N72-27226* #	US-PATENT-CLASS-340-146 2	c 08	N71-23295* #
US-PATENT-CLASS-332-7 51	c 33	N74-20859* #	US-PATENT-CLASS-336-60	c 09	N72-27226* #	US-PATENT-CLASS-340-146 3H	c 74	N81-18986* #
US-PATENT-CLASS-332-7 51	c 36	N78-18427* #	US-PATENT-CLASS-336-83	c 33	N82-24422* #	US-PATENT-CLASS-340-146 3P	c 43	N77-10584* #
US-PATENT-CLASS-332-7 5	c 36	N75-15029* #	US-PATENT-CLASS-337-114	c 09	N71-29035* #	US-PATENT-CLASS-340-146 3Q	c 43	N77-10584* #
US-PATENT-CLASS-332-7 5	c 36	N78-18410* #	US-PATENT-CLASS-337-121	c 09	N71-29035* #	US-PATENT-CLASS-340-146 3S	c 74	N81-18986* #
US-PATENT-CLASS-332-751	c 36	N80-16321* #	US-PATENT-CLASS-337-334	c 37	N77-19458* #	US-PATENT-CLASS-340-146 3Y	c 74	N81-18986* #
US-PATENT-CLASS-332-9R	c 08	N71-29138* #	US-PATENT-CLASS-337-354	c 15	N72-12409* #	US-PATENT-CLASS-340-147C	c 60	N76-14818* #
US-PATENT-CLASS-332-9	c 07	N71-12390* #	US-PATENT-CLASS-337-359	c 15	N72-12409* #	US-PATENT-CLASS-340-147R	c 07	N73-20176* #
US-PATENT-CLASS-333-104	c 33	N82-16340* #	US-PATENT-CLASS-337-75	c 15	N72-12409* #	US-PATENT-CLASS-340-147R	c 60	N78-14818* #
US-PATENT-CLASS-333-12	c 32	N80-32605* #	US-PATENT-CLASS-337	c 25	N79-28253* #	US-PATENT-CLASS-340-147SY	c 17	N76-22245* #
US-PATENT-CLASS-333-12	c 33	N81-27397* #	US-PATENT-CLASS-338-100	c 35	N78-17359* #	US-PATENT-CLASS-340-147	c 09	N70-33182* #
US-PATENT-CLASS-333-14	c 32	N74-19788* #	US-PATENT-CLASS-338-114	c 52	N74-27864* #	US-PATENT-CLASS-340-147	c 09	N70-38998* #
US-PATENT-CLASS-333-16	c 33	N74-17927* #	US-PATENT-CLASS-338-13					



US-PATENT-CLASS-340-164	c 10	N71-27272*	US-PATENT-CLASS-340-25	c 14	N73-16483*	US-PATENT-CLASS-343-100ME	c 14	N72-28437*
US-PATENT-CLASS-340-166	c 10	N71-27272*	US-PATENT-CLASS-340-262	c 54	N78-32270*	US-PATENT-CLASS-343-100ME	c 14	N73-26432*
US-PATENT-CLASS-340-166	c 10	N73-32144*	US-PATENT-CLASS-340-26	c 21	N72-22619*	US-PATENT-CLASS-343-100ME	c 46	N80-14603*
US-PATENT-CLASS-340-167	c 07	N72-25173*	US-PATENT-CLASS-340-26	c 04	N82-16059*	US-PATENT-CLASS-343-100ME	c 35	N80-18359*
US-PATENT-CLASS-340-171	c 09	N72-22202*	US-PATENT-CLASS-340-27AT	c 21	N73-14692*	US-PATENT-CLASS-343-100ME	c 46	N82-12685*
US-PATENT-CLASS-340-171	c 16	N73-16536*	US-PATENT-CLASS-340-27NA	c 21	N73-13643*	US-PATENT-CLASS-343-100PE	c 32	N75-24982*
US-PATENT-CLASS-340-172 5	c 08	N69-21928*	US-PATENT-CLASS-340-27NA	c 06	N82-16075*	US-PATENT-CLASS-343-100PE	c 33	N81-26358*
US-PATENT-CLASS-340-172 5	c 09	N69-24333*	US-PATENT-CLASS-340-27R	c 14	N73-16483*	US-PATENT-CLASS-343-100PE	c 46	N82-12685*
US-PATENT-CLASS-340-172 5	c 08	N71-12502*	US-PATENT-CLASS-340-27R	c 14	N73-20474*	US-PATENT-CLASS-343-100PE	c 35	N82-15381*
US-PATENT-CLASS-340-172 5	c 08	N71-12506*	US-PATENT-CLASS-340-27SS	c 35	N78-14364*	US-PATENT-CLASS-343-100R	c 10	N73-16206*
US-PATENT-CLASS-340-172 5	c 31	N71-15566*	US-PATENT-CLASS-340-271	c 35	N77-30436*	US-PATENT-CLASS-343-100R	c 33	N80-18287*
US-PATENT-CLASS-340-172 5	c 08	N71-19288*	US-PATENT-CLASS-340-277	c 10	N73-30205*	US-PATENT-CLASS-343-100R	c 30	N73-16206*
US-PATENT-CLASS-340-172 5	c 08	N71-22707*	US-PATENT-CLASS-340-279	c 05	N72-16015*	US-PATENT-CLASS-343-100SA	c 33	N74-20860*
US-PATENT-CLASS-340-172 5	c 08	N71-22710*	US-PATENT-CLASS-340-279	c 10	N73-30205*	US-PATENT-CLASS-343-100SA	c 17	N76-21250*
US-PATENT-CLASS-340-172 5	c 07	N71-24624*	US-PATENT-CLASS-340-285	c 14	N71-25901*	US-PATENT-CLASS-343-100SA	c 32	N80-28578*
US-PATENT-CLASS-340-172 5	c 08	N71-27255*	US-PATENT-CLASS-340-285	c 54	N78-32720*	US-PATENT-CLASS-343-100ST	c 07	N72-21118*
US-PATENT-CLASS-340-172 5	c 07	N72-25172*	US-PATENT-CLASS-340-309 1	c 54	N78-32720*	US-PATENT-CLASS-343-100ST	c 33	N74-20860*
US-PATENT-CLASS-340-172 5	c 08	N72-25207*	US-PATENT-CLASS-340-309 4	c 33	N81-14221*	US-PATENT-CLASS-343-100ST	c 32	N75-15854*
US-PATENT-CLASS-340-172 5	c 09	N72-25248*	US-PATENT-CLASS-340-310A	c 33	N81-14221*	US-PATENT-CLASS-343-100ST	c 17	N76-21250*
US-PATENT-CLASS-340-172 5	c 08	N73-13187*	US-PATENT-CLASS-340-310R	c 33	N81-14221*	US-PATENT-CLASS-343-100ST	c 32	N77-20289*
US-PATENT-CLASS-340-172 5	c 08	N73-26176*	US-PATENT-CLASS-340-324AD	c 33	N75-19517*	US-PATENT-CLASS-343-100ST	c 33	N80-18287*
US-PATENT-CLASS-340-172 5	c 60	N76-18800*	US-PATENT-CLASS-340-324A	c 09	N72-25248*	US-PATENT-CLASS-343-100TD	c 32	N79-24210*
US-PATENT-CLASS-340-172 5	c 60	N76-21914*	US-PATENT-CLASS-340-324R	c 26	N72-25680*	US-PATENT-CLASS-343-100TD	c 32	N81-14185*
US-PATENT-CLASS-340-172 5	c 60	N77-12721*	US-PATENT-CLASS-340-324	c 08	N71-12507*	US-PATENT-CLASS-343-100	c 10	N71-18722*
US-PATENT-CLASS-340-172 5	c 60	N77-14751*	US-PATENT-CLASS-340-324	c 09	N71-33519*	US-PATENT-CLASS-343-100	c 07	N71-19854*
US-PATENT-CLASS-340-172 5	c 60	N77-19760*	US-PATENT-CLASS-340-332	c 09	N72-25250*	US-PATENT-CLASS-343-100	c 30	N71-23723*
US-PATENT-CLASS-340-173 2	c 08	N72-21198*	US-PATENT-CLASS-340-336	c 09	N71-33519*	US-PATENT-CLASS-343-100	c 07	N71-24621*
US-PATENT-CLASS-340-173CA	c 33	N75-31331*	US-PATENT-CLASS-340-33	c 21	N73-13643*	US-PATENT-CLASS-343-100	c 09	N71-24804*
US-PATENT-CLASS-340-173CR	c 60	N74-12888*	US-PATENT-CLASS-340-347AD	c 14	N71-28991*	US-PATENT-CLASS-343-100	c 31	N71-24813*
US-PATENT-CLASS-340-173LM	c 60	N74-12888*	US-PATENT-CLASS-340-347AD	c 08	N72-21200*	US-PATENT-CLASS-343-100	c 07	N71-27056*
US-PATENT-CLASS-340-173LM	c 60	N78-10709*	US-PATENT-CLASS-340-347AD	c 08	N72-22163*	US-PATENT-CLASS-343-100	c 07	N71-28900*
US-PATENT-CLASS-340-173LS	c 08	N72-21198*	US-PATENT-CLASS-340-347AD	c 08	N72-22166*	US-PATENT-CLASS-343-105R	c 32	N75-26194*
US-PATENT-CLASS-340-173LS	c 36	N75-19652*	US-PATENT-CLASS-340-347AD	c 08	N71-31226*	US-PATENT-CLASS-343-108R	c 04	N74-13420*
US-PATENT-CLASS-340-173	c 10	N73-32144*	US-PATENT-CLASS-340-347AD	c 08	N73-20217*	US-PATENT-CLASS-343-10	c 32	N77-32342*
US-PATENT-CLASS-340-174 1L	c 35	N74-11283*	US-PATENT-CLASS-340-347AD	c 35	N74-17885*	US-PATENT-CLASS-343-11R	c 09	N73-12211*
US-PATENT-CLASS-340-174 1M	c 36	N74-13205*	US-PATENT-CLASS-340-347AD	c 35	N74-32877*	US-PATENT-CLASS-343-11VB	c 09	N73-12211*
US-PATENT-CLASS-340-174 1M	c 35	N78-29421*	US-PATENT-CLASS-340-347AD	c 33	N76-18345*	US-PATENT-CLASS-343-112CA	c 21	N73-13643*
US-PATENT-CLASS-340-174 1M	c 35	N79-16246*	US-PATENT-CLASS-340-347AD	c 60	N72-27371*	US-PATENT-CLASS-343-112CA	c 21	N73-30641*
US-PATENT-CLASS-340-174 1R	c 21	N73-13644*	US-PATENT-CLASS-340-347DA	c 08	N71-27057*	US-PATENT-CLASS-343-112CA	c 03	N75-30132*
US-PATENT-CLASS-340-174 1	c 08	N71-21042*	US-PATENT-CLASS-340-347DA	c 08	N72-20176*	US-PATENT-CLASS-343-112D	c 14	N72-28437*
US-PATENT-CLASS-340-174 1	c 07	N71-23001*	US-PATENT-CLASS-340-347DA	c 08	N72-25206*	US-PATENT-CLASS-343-112D	c 32	N75-26194*
US-PATENT-CLASS-340-174 1	c 08	N71-27210*	US-PATENT-CLASS-340-347DA	c 08	N73-32081*	US-PATENT-CLASS-343-112D	c 46	N80-14603*
US-PATENT-CLASS-340-174AG	c 23	N72-17747*	US-PATENT-CLASS-340-347DD	c 10	N71-33407*	US-PATENT-CLASS-343-112R	c 09	N73-32110*
US-PATENT-CLASS-340-174CS	c 08	N72-21199*	US-PATENT-CLASS-340-347DD	c 08	N72-18184*	US-PATENT-CLASS-343-112R	c 17	N78-17140*
US-PATENT-CLASS-340-174CT	c 23	N72-17747*	US-PATENT-CLASS-340-347DD	c 08	N72-20176*	US-PATENT-CLASS-343-112R	c 04	N80-32359*
US-PATENT-CLASS-340-174GA	c 23	N72-17747*	US-PATENT-CLASS-340-347DD	c 08	N72-21197*	US-PATENT-CLASS-343-112R	c 32	N81-27341*
US-PATENT-CLASS-340-174LC	c 08	N72-21199*	US-PATENT-CLASS-340-347DD	c 08	N73-12176*	US-PATENT-CLASS-343-112TC	c 17	N76-21250*
US-PATENT-CLASS-340-174MA	c 24	N75-13032*	US-PATENT-CLASS-340-347DD	c 60	N76-23850*	US-PATENT-CLASS-343-112	c 21	N71-13958*
US-PATENT-CLASS-340-174M	c 08	N72-21199*	US-PATENT-CLASS-340-347DD	c 32	N77-12239*	US-PATENT-CLASS-343-112	c 02	N71-19287*
US-PATENT-CLASS-340-174SC	c 23	N72-17747*	US-PATENT-CLASS-340-347DD	c 60	N78-17691*	US-PATENT-CLASS-343-112	c 21	N74-24948*
US-PATENT-CLASS-340-174SR	c 08	N72-21199*	US-PATENT-CLASS-340-347DD	c 60	N79-20751*	US-PATENT-CLASS-343-113R	c 09	N73-32110*
US-PATENT-CLASS-340-174YC	c 36	N74-13205*	US-PATENT-CLASS-340-347P	c 33	N82-26570*	US-PATENT-CLASS-343-113R	c 44	N78-28594*
US-PATENT-CLASS-340-174YC	c 35	N78-29421*	US-PATENT-CLASS-340-347P	c 60	N76-23850*	US-PATENT-CLASS-343-113	c 10	N71-21473*
US-PATENT-CLASS-340-174	c 08	N71-12504*	US-PATENT-CLASS-340-347P	c 35	N77-30436*	US-PATENT-CLASS-343-113	c 07	N71-24625*
US-PATENT-CLASS-340-174	c 09	N71-12515*	US-PATENT-CLASS-340-347R	c 08	N72-22165*	US-PATENT-CLASS-343-117R	c 32	N79-13214*
US-PATENT-CLASS-340-174	c 08	N71-18595*	US-PATENT-CLASS-340-347SH	c 33	N77-31404*	US-PATENT-CLASS-343-117	c 07	N71-27056*
US-PATENT-CLASS-340-174	c 08	N71-18694*	US-PATENT-CLASS-340-347SY	c 62	N76-19496*	US-PATENT-CLASS-343-118	c 32	N79-13214*
US-PATENT-CLASS-340-174	c 10	N71-23033*	US-PATENT-CLASS-340-347SY	c 35	N77-30436*	US-PATENT-CLASS-343-119	c 44	N78-28594*
US-PATENT-CLASS-340-174	c 10	N71-26418*	US-PATENT-CLASS-340-347	c 08	N70-35423*	US-PATENT-CLASS-343-12R	c 08	N72-25209*
US-PATENT-CLASS-340-174	c 10	N71-26434*	US-PATENT-CLASS-340-347	c 08	N70-40125*	US-PATENT-CLASS-343-12	c 21	N70-41930*
US-PATENT-CLASS-340-174	c 08	N71-28925*	US-PATENT-CLASS-340-347	c 08	N71-12501*	US-PATENT-CLASS-343-12	c 10	N72-20224*
US-PATENT-CLASS-340-174	c 10	N71-29135*	US-PATENT-CLASS-340-347	c 08	N71-18594*	US-PATENT-CLASS-343-13	c 09	N71-18598*
US-PATENT-CLASS-340-177VA	c 06	N80-18036*	US-PATENT-CLASS-340-347	c 08	N71-19435*	US-PATENT-CLASS-343-14	c 07	N70-41680*
US-PATENT-CLASS-340-177	c 09	N72-17153*	US-PATENT-CLASS-340-347	c 08	N71-19544*	US-PATENT-CLASS-343-14	c 08	N72-25209*
US-PATENT-CLASS-340-182	c 33	N74-27862*	US-PATENT-CLASS-340-347	c 08	N71-19687*	US-PATENT-CLASS-343-14	c 14	N73-25461*
US-PATENT-CLASS-340-183	c 52	N74-26625*	US-PATENT-CLASS-340-347	c 08	N71-24650*	US-PATENT-CLASS-343-14	c 32	N79-14267*
US-PATENT-CLASS-340-189M	c 17	N76-29347*	US-PATENT-CLASS-340-347	c 10	N71-25917*	US-PATENT-CLASS-343-14	c 31	N79-28370*
US-PATENT-CLASS-340-198	c 14	N70-33179*	US-PATENT-CLASS-340-347	c 10	N71-26544*	US-PATENT-CLASS-343-16M	c 10	N72-22235*
US-PATENT-CLASS-340-198	c 07	N71-11298*	US-PATENT-CLASS-340-347	c 08	N73-28045*	US-PATENT-CLASS-343-16M	c 44	N78-28594*
US-PATENT-CLASS-340-200	c 33	N72-27862*	US-PATENT-CLASS-340-348	c 08	N72-22167*	US-PATENT-CLASS-343-16	c 09	N71-20864*
US-PATENT-CLASS-340-200	c 33	N77-31404*	US-PATENT-CLASS-340-38P	c 66	N76-19888*	US-PATENT-CLASS-343-16	c 10	N71-21483*
US-PATENT-CLASS-340-203	c 09	N72-22202*	US-PATENT-CLASS-340-403	c 10	N71-27272*	US-PATENT-CLASS-343-17.1PF	c 32	N82-23376*
US-PATENT-CLASS-340-203	c 52	N74-26625*	US-PATENT-CLASS-340-407	c 71	N74-21014*	US-PATENT-CLASS-343-17.2PC	c 35	N79-10391*
US-PATENT-CLASS-340-206	c 17	N76-29347*	US-PATENT-CLASS-340-412	c 10	N71-24798*	US-PATENT-CLASS-343-17.2	c 07	N70-36911*
US-PATENT-CLASS-340-207P	c 17	N76-22245*	US-PATENT-CLASS-340-415	c 10	N73-32144*	US-PATENT-CLASS-343-17.5	c 14	N73-25461*
US-PATENT-CLASS-340-207R	c 52	N74-26625*	US-PATENT-CLASS-340-418	c 14	N73-16484*	US-PATENT-CLASS-343-17 5	c 32	N75-15854*
US-PATENT-CLASS-340-207	c 07	N73-25160*	US-PATENT-CLASS-340-5C	c 14	N73-27379*	US-PATENT-CLASS-343-17 7	c 07	N71-12391*
US-PATENT-CLASS-340-210	c 03	N72-20031*	US-PATENT-CLASS-340-5H	c 32	N77-21267*	US-PATENT-CLASS-343-17 7	c 44	N74-19870*
US-PATENT-CLASS-340-213.1	c 10	N71-19417*	US-PATENT-CLASS-340-5R	c 35	N74-16135*	US-PATENT-CLASS-343-17 7	c 32	N77-31350*
US-PATENT-CLASS-340-213R	c 54	N78-32720*	US-PATENT-CLASS-340-57	c 14	N71-15620*	US-PATENT-CLASS-343-17 7	c 32	N79-11265*
US-PATENT-CLASS-340-213	c 10	N71-27272*	US-PATENT-CLASS-340-602	c 33	N80-23559*	US-PATENT-CLASS-343-176	c 07	N71-27056*
US-PATENT-CLASS-340-223	c 10	N73-32144*	US-PATENT-CLASS-340-604	c 33	N80-23559*	US-PATENT-CLASS-343-176	c 32	N76-14321*
US-PATENT-CLASS-340-224	c 37	N71-19458*	US-PATENT-CLASS-340-650	c 33	N79-18193*	US-PATENT-CLASS-343-179	c 07	N72-11149*
US-PATENT-CLASS-340-227R	c 14	N72-25412*	US-PATENT-CLASS-340-664	c 33	N79-18193*	US-PATENT-CLASS-343-179	c 07	N73-20174*
US-PATENT-CLASS-340-227	c 10	N71-16058*	US-PATENT-CLASS-340-8LF	c 71	N79-23753*	US-PATENT-CLASS-343-179	c 32	N78-15323*
US-PATENT-CLASS-340-227	c 14	N71-27186*	US-PATENT-CLASS-340-8R	c 35	N74-16135*	US-PATENT-CLASS-343-179	c 32	N79-20296*
US-PATENT-CLASS-340-228 2	c 10	N72-17173*	US-PATENT-CLASS-340-825 8R	c 33	N82-29538*	US-PATENT-CLASS-343-18A	c 32	N80-14281*
US-PATENT-CLASS-340-228S	c 14	N73-16484*	US-PATENT-CLASS-340-870 24	c 33	N81-14221*	US-PATENT-CLASS-343-18B	c 32	N74-12912*
US-PATENT-CLASS-340-233	c 14	N71-25901*	US-PATENT-CLASS-340-97	c 21	N73-13643*	US-PATENT-CLASS-343-18B	c 32	N77-21267*
US-PATENT-CLASS-340-235	c 10	N71-26334*	US-PATENT-CLASS-343-DIG 2	c 07	N73-24176*	US-PATENT-CLASS-343-18B	c 43	N80-18498*
US-PATENT-CLASS-340-237S	c 45	N76-17656*	US-PATENT-CLASS-343-DIG 2	c 33	N74-20860*	US-PATENT-CLASS-343-18D	c 33	N80-18498*
US-PATENT-CLASS-340-240	c 09	N72-27227*	US-PATENT-CLASS-343-DIG 3	c 09	N72-12136*	US-PATENT-CLASS-343-18	c 31	N70-37981*
US-PATENT-CLASS-340-242	c 35	N75-19612*	US-PATENT-CLASS-343-100CL	c 32	N77-32342*	US-PATENT-CLASS-343-18	c 30	N70-40063*
US-PATENT-CLASS-340-248	c 10	N71-27338*	US-PATENT-CLASS-343-100CL	c 32	N79-14268*	US-PATENT-CLASS-343-18	c 07	N70-40309*
US-PATENT-CLASS-340-258R	c 07	N73-25160*	US-PATENT-CLASS-343-100CL	c 32	N81-29308*	US-PATENT-CLASS-343-200	c 07	N73-16121*
US-PATENT-CLASS-340-258	c 10	N72-28240*						



US-PATENT-CLASS-343-204	c 07	N73-26118* #	US-PATENT-CLASS-343-781R	c 32	N81-25278* #	US-PATENT-CLASS-343-915	c 07	N73-14130* #
US-PATENT-CLASS-343-225	c 17	N78-17140* #	US-PATENT-CLASS-343-781	c 09	N70-35219* #	US-PATENT-CLASS-343-915	c 07	N73-24176* #
US-PATENT-CLASS-343-5CM	c 07	N72-21118* #	US-PATENT-CLASS-343-781	c 09	N70-35382* #	US-PATENT-CLASS-343-915	c 32	N76-18295* #
US-PATENT-CLASS-343-5CM	c 32	N77-21267* #	US-PATENT-CLASS-343-781	c 09	N70-35425* #	US-PATENT-CLASS-343-915	c 33	N76-32457* #
US-PATENT-CLASS-343-5CM	c 32	N77-32342* #	US-PATENT-CLASS-343-781	c 07	N72-32169* #	US-PATENT-CLASS-343-9	c 32	N75-15854* #
US-PATENT-CLASS-343-5CM	c 35	N79-10391* #	US-PATENT-CLASS-343-781	c 32	N74-11000* #	US-PATENT-CLASS-343-9	c 32	N79-10264* #
US-PATENT-CLASS-343-5CM	c 32	N79-14268* #	US-PATENT-CLASS-343-781	c 32	N75-19516* #	US-PATENT-CLASS-346-107A	c 14	N72-18411* #
US-PATENT-CLASS-343-5CM	c 43	N80-18498* #	US-PATENT-CLASS-343-781	c 33	N75-19516* #	US-PATENT-CLASS-346-107	c 23	N71-23976* #
US-PATENT-CLASS-343-5CM	c 32	N82-12297* #	US-PATENT-CLASS-343-781	c 32	N76-21365* #	US-PATENT-CLASS-346-108	c 35	N74-15831* #
US-PATENT-CLASS-343-5DP	c 07	N72-11149* #	US-PATENT-CLASS-343-782	c 07	N73-14130* #	US-PATENT-CLASS-346-110	c 14	N73-32322* #
US-PATENT-CLASS-343-5DP	c 09	N73-12211* #	US-PATENT-CLASS-343-782	c 32	N78-31321* #	US-PATENT-CLASS-346-138	c 21	N73-13644* #
US-PATENT-CLASS-343-5DP	c 32	N77-32342* #	US-PATENT-CLASS-343-784	c 07	N71-28980* #	US-PATENT-CLASS-346-138	c 35	N74-15831* #
US-PATENT-CLASS-343-5DP	c 32	N82-23376* #	US-PATENT-CLASS-343-786	c 07	N71-15907* #	US-PATENT-CLASS-346-1	c 12	N71-20815* #
US-PATENT-CLASS-343-5GC	c 32	N75-24982* #	US-PATENT-CLASS-343-786	c 07	N71-22750* #	US-PATENT-CLASS-346-1	c 09	N72-21246* #
US-PATENT-CLASS-343-5MM	c 32	N77-21267* #	US-PATENT-CLASS-343-786	c 07	N71-26101* #	US-PATENT-CLASS-346-23	c 14	N72-18411* #
US-PATENT-CLASS-343-5NA	c 31	N79-28370* #	US-PATENT-CLASS-343-786	c 07	N71-27233* #	US-PATENT-CLASS-346-24	c 35	N74-15831* #
US-PATENT-CLASS-343-5W	c 35	N79-10391* #	US-PATENT-CLASS-343-786	c 07	N72-20141* #	US-PATENT-CLASS-346-29	c 09	N72-21246* #
US-PATENT-CLASS-343-5W	c 43	N80-18498* #	US-PATENT-CLASS-343-786	c 10	N72-22235* #	US-PATENT-CLASS-346-33R	c 35	N74-32877* #
US-PATENT-CLASS-343-6 BR	c 32	N77-20289* #	US-PATENT-CLASS-343-786	c 07	N72-25174* #	US-PATENT-CLASS-346-44	c 09	N69-21467* #
US-PATENT-CLASS-343-6 5R	c 07	N72-12080* #	US-PATENT-CLASS-343-786	c 09	N72-31235* #	US-PATENT-CLASS-346-50	c 14	N71-21006* #
US-PATENT-CLASS-343-6 5R	c 07	N72-21118* #	US-PATENT-CLASS-343-786	c 32	N74-20863* #	US-PATENT-CLASS-346-74MD	c 21	N73-13644* #
US-PATENT-CLASS-343-6 5R	c 07	N72-25171* #	US-PATENT-CLASS-343-786	c 32	N76-15330* #	US-PATENT-CLASS-346-74MT	c 35	N79-16246* #
US-PATENT-CLASS-343-6 5R	c 08	N72-25209* #	US-PATENT-CLASS-343-786	c 32	N76-21365* #	US-PATENT-CLASS-346R	c 73	N77-18891* #
US-PATENT-CLASS-343-6 5R	c 07	N73-25161* #	US-PATENT-CLASS-343-786	c 32	N80-23524* #	US-PATENT-CLASS-349	c 25	N79-28253* #
US-PATENT-CLASS-343-6 5R	c 21	N73-30641* #	US-PATENT-CLASS-343-786	c 32	N80-29539* #	US-PATENT-CLASS-35-10-2	c 14	N71-15621* #
US-PATENT-CLASS-343-6 5R	c 32	N74-12912* #	US-PATENT-CLASS-343-786	c 32	N81-25278* #	US-PATENT-CLASS-35-12C	c 14	N73-27377* #
US-PATENT-CLASS-343-6 5R	c 32	N75-15854* #	US-PATENT-CLASS-343-789	c 32	N81-14187* #	US-PATENT-CLASS-35-12C	c 09	N75-15662* #
US-PATENT-CLASS-343-6 5R	c 03	N75-30132* #	US-PATENT-CLASS-343-789	c 32	N82-27558* #	US-PATENT-CLASS-35-12E	c 74	N79-13855* #
US-PATENT-CLASS-343-6 5R	c 32	N77-20289* #	US-PATENT-CLASS-343-795	c 32	N82-11336* #	US-PATENT-CLASS-35-12E	c 09	N74-30597* #
US-PATENT-CLASS-343-6 5SS	c 32	N74-12912* #	US-PATENT-CLASS-343-797	c 09	N71-24842* #	US-PATENT-CLASS-35-12E	c 09	N79-31228* #
US-PATENT-CLASS-343-6 5	c 21	N71-11766* #	US-PATENT-CLASS-343-797	c 07	N72-22127* #	US-PATENT-CLASS-35-12H	c 09	N79-31228* #
US-PATENT-CLASS-343-6 5	c 10	N71-23099* #	US-PATENT-CLASS-343-797	c 09	N72-31235* #	US-PATENT-CLASS-35-12N	c 09	N76-24280* #
US-PATENT-CLASS-343-6 8R	c 07	N72-12080* #	US-PATENT-CLASS-343-797	c 07	N73-28013* #	US-PATENT-CLASS-35-12N	c 09	N78-18083* #
US-PATENT-CLASS-343-6 8R	c 07	N73-25161* #	US-PATENT-CLASS-343-797	c 32	N74-20863* #	US-PATENT-CLASS-35-12N	c 74	N79-13855* #
US-PATENT-CLASS-343-6 8R	c 14	N73-25461* #	US-PATENT-CLASS-343-797	c 33	N76-14372* #	US-PATENT-CLASS-35-12	c 11	N70-34815* #
US-PATENT-CLASS-343-6R	c 32	N79-10264* #	US-PATENT-CLASS-343-797	c 32	N81-14187* #	US-PATENT-CLASS-35-12	c 31	N70-34966* #
US-PATENT-CLASS-343-6	c 30	N71-16090* #	US-PATENT-CLASS-343-799	c 07	N71-27233* #	US-PATENT-CLASS-35-12	c 11	N71-10746* #
US-PATENT-CLASS-343-7 4	c 10	N72-22235* #	US-PATENT-CLASS-343-803	c 07	N73-28013* #	US-PATENT-CLASS-35-12	c 11	N71-10748* #
US-PATENT-CLASS-343-7 4	c 32	N79-13214* #	US-PATENT-CLASS-343-823	c 07	N71-28979* #	US-PATENT-CLASS-35-12	c 11	N71-10776* #
US-PATENT-CLASS-343-7 5	c 07	N69-39974* #	US-PATENT-CLASS-343-830	c 32	N80-32604* #	US-PATENT-CLASS-35-12	c 11	N71-18773* #
US-PATENT-CLASS-343-7 5	c 09	N71-24595* #	US-PATENT-CLASS-343-833	c 31	N70-34135* #	US-PATENT-CLASS-35-12	c 11	N71-19494* #
US-PATENT-CLASS-343-7 5	c 07	N72-11149* #	US-PATENT-CLASS-343-837	c 07	N72-32169* #	US-PATENT-CLASS-35-12	c 11	N71-21474* #
US-PATENT-CLASS-343-7 5	c 44	N74-19870* #	US-PATENT-CLASS-343-837	c 07	N73-14130* #	US-PATENT-CLASS-35-12	c 18	N76-14186* #
US-PATENT-CLASS-343-7 5	c 32	N82-23376* #	US-PATENT-CLASS-343-837	c 33	N75-19516* #	US-PATENT-CLASS-35-17	c 05	N71-24606* #
US-PATENT-CLASS-343-700MS	c 32	N78-24391* #	US-PATENT-CLASS-343-837	c 32	N76-15329* #	US-PATENT-CLASS-35-19	c 10	N71-27365* #
US-PATENT-CLASS-343-700MS	c 32	N80-32604* #	US-PATENT-CLASS-343-837	c 32	N76-18295* #	US-PATENT-CLASS-35-22R	c 05	N73-13114* #
US-PATENT-CLASS-343-700MS	c 32	N82-11336* #	US-PATENT-CLASS-343-837	c 32	N78-31321* #	US-PATENT-CLASS-35-29	c 11	N71-16028* #
US-PATENT-CLASS-343-703	c 09	N71-13521* #	US-PATENT-CLASS-343-839	c 09	N79-19234* #	US-PATENT-CLASS-35-29	c 05	N71-28619* #
US-PATENT-CLASS-343-703	c 07	N71-24614* #	US-PATENT-CLASS-343-840	c 07	N71-27233* #	US-PATENT-CLASS-35-35A	c 71	N74-21014* #
US-PATENT-CLASS-343-705	c 07	N70-38200* #	US-PATENT-CLASS-343-840	c 09	N72-12136* #	US-PATENT-CLASS-35-45	c 14	N70-35394* #
US-PATENT-CLASS-343-705	c 07	N70-40202* #	US-PATENT-CLASS-343-840	c 07	N72-32169* #	US-PATENT-CLASS-35-49	c 12	N69-39988* #
US-PATENT-CLASS-343-705	c 31	N71-10747* #	US-PATENT-CLASS-343-840	c 32	N76-18295* #	US-PATENT-CLASS-35-8	c 05	N72-16015* #
US-PATENT-CLASS-343-705	c 03	N76-32140* #	US-PATENT-CLASS-343-844	c 32	N79-11264* #	US-PATENT-CLASS-350-100	c 36	N77-25501* #
US-PATENT-CLASS-343-706	c 07	N72-21117* #	US-PATENT-CLASS-343-844	c 32	N80-28578* #	US-PATENT-CLASS-350-102	c 23	N71-29123* #
US-PATENT-CLASS-343-708	c 09	N71-22888* #	US-PATENT-CLASS-343-846	c 33	N76-14372* #	US-PATENT-CLASS-350-102	c 36	N77-25501* #
US-PATENT-CLASS-343-708	c 07	N71-22984* #	US-PATENT-CLASS-343-846	c 32	N82-11336* #	US-PATENT-CLASS-350-138	c 23	N72-27728* #
US-PATENT-CLASS-343-708	c 07	N71-28980* #	US-PATENT-CLASS-343-853	c 07	N72-11148* #	US-PATENT-CLASS-350-145	c 74	N77-20882* #
US-PATENT-CLASS-343-708	c 09	N72-25247* #	US-PATENT-CLASS-343-853	c 07	N72-22127* #	US-PATENT-CLASS-350-147	c 14	N72-27409* #
US-PATENT-CLASS-343-708	c 32	N74-20864* #	US-PATENT-CLASS-343-853	c 07	N72-25174* #	US-PATENT-CLASS-350-150	c 26	N72-25680* #
US-PATENT-CLASS-343-708	c 32	N82-11336* #	US-PATENT-CLASS-343-853	c 09	N72-31235* #	US-PATENT-CLASS-350-150	c 36	N76-18427* #
US-PATENT-CLASS-343-718	c 09	N71-18720* #	US-PATENT-CLASS-343-853	c 10	N73-16206* #	US-PATENT-CLASS-350-151	c 36	N74-13205* #
US-PATENT-CLASS-343-720	c 09	N72-12136* #	US-PATENT-CLASS-343-853	c 32	N74-20863* #	US-PATENT-CLASS-350-151	c 35	N78-29421* #
US-PATENT-CLASS-343-725	c 07	N73-28013* #	US-PATENT-CLASS-343-853	c 32	N74-20864* #	US-PATENT-CLASS-350-157	c 74	N79-14891* #
US-PATENT-CLASS-343-727	c 32	N81-14187* #	US-PATENT-CLASS-343-854	c 07	N69-27460* #	US-PATENT-CLASS-350-159	c 74	N78-17865* #
US-PATENT-CLASS-343-727	c 32	N82-11336* #	US-PATENT-CLASS-343-854	c 07	N72-27233* #	US-PATENT-CLASS-350-160R	c 14	N72-25410* #
US-PATENT-CLASS-343-729	c 07	N73-28013* #	US-PATENT-CLASS-343-854	c 09	N73-19234* #	US-PATENT-CLASS-350-160R	c 26	N72-25680* #
US-PATENT-CLASS-343-730	c 32	N74-20863* #	US-PATENT-CLASS-343-854	c 33	N74-28260* #	US-PATENT-CLASS-350-160	c 36	N76-18427* #
US-PATENT-CLASS-343-754	c 09	N73-19234* #	US-PATENT-CLASS-343-854	c 33	N76-27472* #	US-PATENT-CLASS-350-161	c 26	N72-27784* #
US-PATENT-CLASS-343-755	c 33	N76-27472* #	US-PATENT-CLASS-343-854	c 32	N79-11264* #	US-PATENT-CLASS-350-161	c 36	N75-31427* #
US-PATENT-CLASS-343-755	c 32	N81-25278* #	US-PATENT-CLASS-343-854	c 32	N80-28578* #	US-PATENT-CLASS-350-162R	c 74	N80-21140* #
US-PATENT-CLASS-343-761	c 33	N75-19516* #	US-PATENT-CLASS-343-872	c 07	N71-28980* #	US-PATENT-CLASS-350-162SF	c 23	N73-30666* #
US-PATENT-CLASS-343-761	c 32	N76-21365* #	US-PATENT-CLASS-343-873	c 07	N71-19493* #	US-PATENT-CLASS-350-162SF	c 74	N76-31998* #
US-PATENT-CLASS-343-762	c 07	N72-25174* #	US-PATENT-CLASS-343-873	c 09	N72-25247* #	US-PATENT-CLASS-350-162SF	c 74	N77-28932* #
US-PATENT-CLASS-343-768	c 10	N71-26142* #	US-PATENT-CLASS-343-876	c 32	N76-15329* #	US-PATENT-CLASS-350-162SF	c 36	N77-32478* #
US-PATENT-CLASS-343-769	c 32	N74-20864* #	US-PATENT-CLASS-343-880	c 07	N73-26117* #	US-PATENT-CLASS-350-162	c 14	N72-17323* #
US-PATENT-CLASS-343-770	c 09	N72-31235* #	US-PATENT-CLASS-343-880	c 18	N80-14183* #	US-PATENT-CLASS-350-165	c 27	N78-31233* #
US-PATENT-CLASS-343-770	c 33	N76-14372* #	US-PATENT-CLASS-343-882	c 33	N76-32457* #	US-PATENT-CLASS-350-16	c 14	N72-22444* #
US-PATENT-CLASS-343-771	c 07	N71-28809* #	US-PATENT-CLASS-343-883	c 07	N73-26117* #	US-PATENT-CLASS-350-170	c 73	N78-32848* #
US-PATENT-CLASS-343-771	c 07	N72-11148* #	US-PATENT-CLASS-343-883	c 18	N80-14183* #	US-PATENT-CLASS-350-171	c 23	N72-23695* #
US-PATENT-CLASS-343-771	c 09	N72-21244* #	US-PATENT-CLASS-343-884	c 07	N71-27191* #	US-PATENT-CLASS-350-173	c 73	N78-32848* #
US-PATENT-CLASS-343-771	c 07	N72-21217* #	US-PATENT-CLASS-343-889	c 07	N73-26117* #	US-PATENT-CLASS-350-174	c 74	N77-20882* #
US-PATENT-CLASS-343-771	c 09	N72-25247* #	US-PATENT-CLASS-343-893	c 09	N72-21244* #	US-PATENT-CLASS-350-174	c 73	N78-32848* #
US-PATENT-CLASS-343-771	c 09	N72-31235* #	US-PATENT-CLASS-343-893	c 07	N73-28013* #	US-PATENT-CLASS-350-175E	c 74	N80-27185* #
US-PATENT-CLASS-343-772	c 07	N72-20141* #	US-PATENT-CLASS-343-895	c 09	N73-19234* #	US-PATENT-CLASS-350-175FN	c 14	N72-25414* #
US-PATENT-CLASS-343-772	c 32	N81-25278* #	US-PATENT-CLASS-343-895	c 07	N73-26117* #	US-PATENT-CLASS-350-189	c 27	N78-31233* #
US-PATENT-CLASS-343-773	c 07	N72-20141* #	US-PATENT-CLASS-343-895	c 32	N80-23524* #	US-PATENT-CLASS-350-189	c 23	N71-24857* #
US-PATENT-CLASS-343-776	c 07	N71-12396* #	US-PATENT-CLASS-343-895	c 32	N82-27558* #	US-PATENT-CLASS-350-199	c 14	N73-30393* #
US-PATENT-CLASS-343-777	c 07	N71-27233* #	US-PATENT-CLASS-343-909	c 32	N74-11000* #	US-PATENT-CLASS-350-19	c 14	N72-22441* #
US-PATENT-CLASS-343-777	c 07	N72-25174* #	US-PATENT-CLASS-343-909	c 35	N76-15435* #	US-PATENT-CLASS-350-1	c 23	N69-24332* #
US-PATENT-CLASS-343-779	c 07	N71-11285* #	US-PATENT-CLASS-343-909	c 33	N79-28416* #	US-PATENT-CLASS-350-1	c 07	N71-29065* #
US-PATENT-CLASS-343-779	c 10	N72-22235* #	US-PATENT-CLASS-343-909	c 32	N80-14281* #	US-PATENT-CLASS-350-1	c 16	N72-12440* #
US-PATENT-CLASS-343-779	c 07	N72-25174* #	US-PATENT-CLASS-343-912	c 07	N72-21117* #	US-PATENT-CLASS-350-1	c 24	N76-24363* #
US-PATENT-CLASS-343-779	c 32	N76-15329* #	US-PATENT-CLASS-343-912	c 07	N72-22127* #	US-PATENT-CLASS-350-1	c 74	N78-15879* #
US-PATENT-CLASS-343-779	c 33	N76-27472* #	US-PATENT-CLASS-343-915	c 32				



US-PATENT-CLASS-350-204	c 14	N73-30393* #	US-PATENT-CLASS-350-6	c 14	N69-27461* #	US-PATENT-CLASS-356-154	c 15	N71-26673* #
US-PATENT-CLASS-350-204	c 74	N78-17866* #	US-PATENT-CLASS-350-6	c 36	N74-15145* #	US-PATENT-CLASS-356-159	c 36	N78-14380* #
US-PATENT-CLASS-350-211	c 44	N76-14602* #	US-PATENT-CLASS-350-79	c 14	N72-32452* #	US-PATENT-CLASS-356-160	c 36	N78-14380* #
US-PATENT-CLASS-350-213	c 14	N71-15622* #	US-PATENT-CLASS-350-79	c 74	N74-15095* #	US-PATENT-CLASS-356-161	c 26	N73-26751* #
US-PATENT-CLASS-350-226	c 74	N80-27185* #	US-PATENT-CLASS-350-86	c 14	N72-22445* #	US-PATENT-CLASS-356-162	c 66	N76-19888* #
US-PATENT-CLASS-350-236	c 74	N74-15095* #	US-PATENT-CLASS-350-96 25	c 33	N81-29342* #	US-PATENT-CLASS-356-165	c 38	N78-17396* #
US-PATENT-CLASS-350-23	c 14	N72-22441* #	US-PATENT-CLASS-350-96R	c 60	N77-14751* #	US-PATENT-CLASS-356-166	c 14	N71-23175* #
US-PATENT-CLASS-350-253	c 35	N77-27366* #	US-PATENT-CLASS-350-96R	c 60	N77-32731* #	US-PATENT-CLASS-356-167	c 14	N72-11364* #
US-PATENT-CLASS-350-25	c 74	N80-21138* #	US-PATENT-CLASS-350-96WG	c 36	N75-31427* #	US-PATENT-CLASS-356-167	c 66	N76-19888* #
US-PATENT-CLASS-350-269	c 33	N74-20861* #	US-PATENT-CLASS-350-96WG	c 36	N76-18428* #	US-PATENT-CLASS-356-167	c 74	N78-27904* #
US-PATENT-CLASS-350-26	c 14	N72-22441* #	US-PATENT-CLASS-350-96WG	c 36	N76-24553* #	US-PATENT-CLASS-356-169	c 60	N78-10709* #
US-PATENT-CLASS-350-270	c 70	N74-21300* #	US-PATENT-CLASS-350-96	c 07	N71-26291* #	US-PATENT-CLASS-356-171	c 74	N77-22950* #
US-PATENT-CLASS-350-275	c 09	N71-19479* #	US-PATENT-CLASS-351-166	c 74	N78-32854* #	US-PATENT-CLASS-356-172	c 16	N73-33397* #
US-PATENT-CLASS-350-285	c 14	N71-15605* #	US-PATENT-CLASS-351-23	c 05	N73-26072* #	US-PATENT-CLASS-356-172	c 36	N74-21091* #
US-PATENT-CLASS-350-285	c 14	N71-17662* #	US-PATENT-CLASS-351-23	c 52	N76-30793* #	US-PATENT-CLASS-356-172	c 74	N77-22951* #
US-PATENT-CLASS-350-285	c 19	N71-26674* #	US-PATENT-CLASS-351-30	c 05	N73-26072* #	US-PATENT-CLASS-356-17	c 14	N72-21409* #
US-PATENT-CLASS-350-285	c 15	N72-11386* #	US-PATENT-CLASS-351-30	c 52	N76-30793* #	US-PATENT-CLASS-356-180	c 35	N74-27860* #
US-PATENT-CLASS-350-285	c 16	N73-33397* #	US-PATENT-CLASS-351-36	c 05	N73-26072* #	US-PATENT-CLASS-356-186	c 35	N75-19613* #
US-PATENT-CLASS-350-285	c 74	N74-15095* #	US-PATENT-CLASS-351-36	c 52	N76-30793* #	US-PATENT-CLASS-356-189	c 35	N75-19613* #
US-PATENT-CLASS-350-285	c 74	N80-21138* #	US-PATENT-CLASS-351-38	c 54	N75-27759* #	US-PATENT-CLASS-356-18	c 14	N72-21409* #
US-PATENT-CLASS-350-286	c 07	N71-29065* #	US-PATENT-CLASS-352-169	c 14	N73-14427* #	US-PATENT-CLASS-356-197	c 37	N74-18123* #
US-PATENT-CLASS-350-286	c 73	N78-32848* #	US-PATENT-CLASS-352-171	c 35	N82-26628* #	US-PATENT-CLASS-356-199	c 36	N78-14380* #
US-PATENT-CLASS-350-287	c 15	N72-11386* #	US-PATENT-CLASS-352-84	c 16	N71-33410* #	US-PATENT-CLASS-356-201	c 75	N74-30156* #
US-PATENT-CLASS-350-288	c 23	N71-29123* #	US-PATENT-CLASS-352-84	c 14	N72-18411* #	US-PATENT-CLASS-356-201	c 35	N77-14411* #
US-PATENT-CLASS-350-288	c 12	N76-15189* #	US-PATENT-CLASS-353-54	c 34	N74-23066* #	US-PATENT-CLASS-356-202	c 26	N73-26751* #
US-PATENT-CLASS-350-288	c 74	N77-28933* #	US-PATENT-CLASS-353-61	c 34	N74-23066* #	US-PATENT-CLASS-356-203	c 14	N71-26788* #
US-PATENT-CLASS-350-288	c 44	N79-11471* #	US-PATENT-CLASS-354-118	c 74	N81-17886* #	US-PATENT-CLASS-356-204	c 35	N77-14411* #
US-PATENT-CLASS-350-288	c 44	N79-24433* #	US-PATENT-CLASS-354-217	c 35	N82-26628* #	US-PATENT-CLASS-356-204	c 74	N78-17867* #
US-PATENT-CLASS-350-292	c 35	N75-12273* #	US-PATENT-CLASS-354-234	c 33	N74-20861* #	US-PATENT-CLASS-356-207	c 45	N76-17656* #
US-PATENT-CLASS-350-292	c 44	N79-14529* #	US-PATENT-CLASS-354-234	c 70	N74-21300* #	US-PATENT-CLASS-356-208	c 74	N78-33913* #
US-PATENT-CLASS-350-292	c 44	N79-24432* #	US-PATENT-CLASS-354-289	c 35	N82-26628* #	US-PATENT-CLASS-356-209	c 23	N71-16341* #
US-PATENT-CLASS-350-293	c 16	N73-16536* #	US-PATENT-CLASS-354-77	c 74	N79-20856* #	US-PATENT-CLASS-356-209	c 14	N71-28993* #
US-PATENT-CLASS-350-293	c 12	N76-15189* #	US-PATENT-CLASS-355-18	c 14	N73-33361* #	US-PATENT-CLASS-356-209	c 14	N72-17323* #
US-PATENT-CLASS-350-293	c 44	N76-24696* #	US-PATENT-CLASS-356-103	c 14	N71-28994* #	US-PATENT-CLASS-356-209	c 35	N76-31490* #
US-PATENT-CLASS-350-293	c 44	N78-10554* #	US-PATENT-CLASS-356-103	c 36	N75-15028* #	US-PATENT-CLASS-356-210	c 74	N79-11865* #
US-PATENT-CLASS-350-293	c 44	N79-14529* #	US-PATENT-CLASS-356-103	c 74	N78-13874* #	US-PATENT-CLASS-356-212	c 35	N77-31465* #
US-PATENT-CLASS-350-294	c 89	N79-10969* #	US-PATENT-CLASS-356-104	c 16	N71-24074* #	US-PATENT-CLASS-356-213	c 39	N81-25400* #
US-PATENT-CLASS-350-294	c 44	N79-24432* #	US-PATENT-CLASS-356-104	c 74	N78-13874* #	US-PATENT-CLASS-356-216	c 74	N74-15095* #
US-PATENT-CLASS-350-294	c 32	N80-24510* #	US-PATENT-CLASS-356-106LR	c 36	N75-19653* #	US-PATENT-CLASS-356-216	c 35	N80-18359* #
US-PATENT-CLASS-350-295	c 44	N77-32583* #	US-PATENT-CLASS-356-106R	c 72	N74-19310* #	US-PATENT-CLASS-356-216	c 39	N81-25400* #
US-PATENT-CLASS-350-295	c 44	N80-14473* #	US-PATENT-CLASS-356-106R	c 36	N76-14447* #	US-PATENT-CLASS-356-222	c 03	N72-20033* #
US-PATENT-CLASS-350-296	c 44	N79-24432* #	US-PATENT-CLASS-356-106R	c 35	N77-10493* #	US-PATENT-CLASS-356-234	c 39	N81-25400* #
US-PATENT-CLASS-350-296	c 44	N80-14473* #	US-PATENT-CLASS-356-106R	c 47	N77-10753* #	US-PATENT-CLASS-356-236	c 74	N77-21941* #
US-PATENT-CLASS-350-299	c 74	N74-21304* #	US-PATENT-CLASS-356-106S	c 23	N73-13661* #	US-PATENT-CLASS-356-237	c 74	N77-10899* #
US-PATENT-CLASS-350-299	c 44	N76-24696* #	US-PATENT-CLASS-356-106S	c 35	N76-31490* #	US-PATENT-CLASS-356-237	c 38	N78-17395* #
US-PATENT-CLASS-350-299	c 74	N77-28932* #	US-PATENT-CLASS-356-106S	c 35	N78-18391* #	US-PATENT-CLASS-356-237	c 38	N78-17396* #
US-PATENT-CLASS-350-299	c 44	N78-10554* #	US-PATENT-CLASS-356-106S	c 35	N74-23040* #	US-PATENT-CLASS-356-237	c 35	N79-28527* #
US-PATENT-CLASS-350-299	c 44	N78-31526* #	US-PATENT-CLASS-356-106	c 14	N71-17627* #	US-PATENT-CLASS-356-239	c 74	N77-10899* #
US-PATENT-CLASS-350-299	c 44	N79-11471* #	US-PATENT-CLASS-356-106	c 14	N71-17655* #	US-PATENT-CLASS-356-241	c 14	N72-32452* #
US-PATENT-CLASS-350-299	c 44	N79-24433* #	US-PATENT-CLASS-356-106	c 14	N71-27215* #	US-PATENT-CLASS-356-243	c 36	N80-16321* #
US-PATENT-CLASS-350-2	c 23	N71-30027* #	US-PATENT-CLASS-356-106	c 14	N73-12446* #	US-PATENT-CLASS-356-244	c 14	N72-17323* #
US-PATENT-CLASS-350-3 5	c 16	N71-15551* #	US-PATENT-CLASS-356-106	c 35	N74-15146* #	US-PATENT-CLASS-356-244	c 35	N76-31490* #
US-PATENT-CLASS-350-3 5	c 16	N71-15565* #	US-PATENT-CLASS-356-107	c 16	N71-24170* #	US-PATENT-CLASS-356-244	c 35	N80-26867* #
US-PATENT-CLASS-350-3 5	c 16	N71-15567* #	US-PATENT-CLASS-356-108	c 26	N73-26751* #	US-PATENT-CLASS-356-246	c 35	N74-27860* #
US-PATENT-CLASS-350-3 5	c 16	N71-26154* #	US-PATENT-CLASS-356-108	c 16	N73-30476* #	US-PATENT-CLASS-356-246	c 74	N78-17867* #
US-PATENT-CLASS-350-3 5	c 16	N71-29131* #	US-PATENT-CLASS-356-109	c 16	N73-30476* #	US-PATENT-CLASS-356-248	c 14	N72-22444* #
US-PATENT-CLASS-350-3 5	c 14	N72-17324* #	US-PATENT-CLASS-356-110	c 14	N73-25463* #	US-PATENT-CLASS-356-28 5	c 32	N80-24510* #
US-PATENT-CLASS-350-3 5	c 16	N73-30476* #	US-PATENT-CLASS-356-110	c 35	N78-18391* #	US-PATENT-CLASS-356-28 5	c 36	N81-24422* #
US-PATENT-CLASS-350-3 5	c 35	N74-15146* #	US-PATENT-CLASS-356-112	c 72	N74-19310* #	US-PATENT-CLASS-356-28 5	c 36	N82-32712* #
US-PATENT-CLASS-350-3 5	c 35	N74-17153* #	US-PATENT-CLASS-356-113	c 14	N72-17323* #	US-PATENT-CLASS-356-28	c 21	N71-19212* #
US-PATENT-CLASS-350-3 5	c 35	N74-26946* #	US-PATENT-CLASS-356-113	c 35	N74-23040* #	US-PATENT-CLASS-356-28	c 16	N71-24828* #
US-PATENT-CLASS-350-3 5	c 35	N75-25124* #	US-PATENT-CLASS-356-114	c 14	N73-12446* #	US-PATENT-CLASS-356-28	c 72	N74-19310* #
US-PATENT-CLASS-350-3 5	c 35	N75-27328* #	US-PATENT-CLASS-356-114	c 35	N76-31490* #	US-PATENT-CLASS-356-28	c 36	N75-15028* #
US-PATENT-CLASS-350-3 5	c 35	N76-18402* #	US-PATENT-CLASS-356-117	c 23	N71-16101* #	US-PATENT-CLASS-356-28	c 35	N75-16783* #
US-PATENT-CLASS-350-3 5	c 35	N78-17357* #	US-PATENT-CLASS-356-120	c 74	N78-27904* #	US-PATENT-CLASS-356-28	c 36	N76-14447* #
US-PATENT-CLASS-350-3 5	c 38	N78-32447* #	US-PATENT-CLASS-356-123	c 74	N76-19935* #	US-PATENT-CLASS-356-28	c 36	N77-25501* #
US-PATENT-CLASS-350-301	c 74	N81-17886* #	US-PATENT-CLASS-356-124	c 74	N76-19935* #	US-PATENT-CLASS-356-28	c 74	N78-17866* #
US-PATENT-CLASS-350-310	c 11	N69-24321* #	US-PATENT-CLASS-356-124	c 74	N79-11865* #	US-PATENT-CLASS-356-28	c 35	N79-18296* #
US-PATENT-CLASS-350-310	c 23	N71-24868* #	US-PATENT-CLASS-356-129	c 74	N79-20856* #	US-PATENT-CLASS-356-28	c 36	N80-16321* #
US-PATENT-CLASS-350-310	c 23	N71-29123* #	US-PATENT-CLASS-356-138	c 14	N72-20379* #	US-PATENT-CLASS-356-300	c 43	N79-17288* #
US-PATENT-CLASS-350-310	c 23	N71-33229* #	US-PATENT-CLASS-356-138	c 16	N73-33397* #	US-PATENT-CLASS-356-328	c 35	N80-26635* #
US-PATENT-CLASS-350-310	c 23	N72-22673* #	US-PATENT-CLASS-356-141	c 14	N72-27409* #	US-PATENT-CLASS-356-32	c 14	N72-11364* #
US-PATENT-CLASS-350-310	c 74	N77-28933* #	US-PATENT-CLASS-356-141	c 14	N73-28490* #	US-PATENT-CLASS-356-32	c 32	N73-20740* #
US-PATENT-CLASS-350-311	c 74	N75-25706* #	US-PATENT-CLASS-356-141	c 36	N74-21091* #	US-PATENT-CLASS-356-32	c 39	N81-25400* #
US-PATENT-CLASS-350-312	c 16	N72-12440* #	US-PATENT-CLASS-356-141	c 89	N74-30886* #	US-PATENT-CLASS-356-334	c 74	N80-21140* #
US-PATENT-CLASS-350-320	c 74	N77-28933* #	US-PATENT-CLASS-356-141	c 74	N77-22951* #	US-PATENT-CLASS-356-345	c 74	N81-17888* #
US-PATENT-CLASS-350-320	c 44	N77-32583* #	US-PATENT-CLASS-356-147	c 89	N74-30886* #	US-PATENT-CLASS-356-345	c 74	N81-29963* #
US-PATENT-CLASS-350-320	c 73	N78-32848* #	US-PATENT-CLASS-356-148	c 16	N73-33397* #	US-PATENT-CLASS-356-346	c 35	N80-20563* #
US-PATENT-CLASS-350-320	c 44	N79-14529* #	US-PATENT-CLASS-356-150	c 15	N71-28740* #	US-PATENT-CLASS-356-346	c 74	N81-29963* #
US-PATENT-CLASS-350-358	c 36	N82-29589* #	US-PATENT-CLASS-356-150	c 74	N80-21138* #	US-PATENT-CLASS-356-349	c 36	N82-16396* #
US-PATENT-CLASS-350-359	c 36	N80-16321* #	US-PATENT-CLASS-356-152	c 15	N71-28740* #	US-PATENT-CLASS-356-350	c 35	N81-33448* #
US-PATENT-CLASS-350-35	c 14	N72-22441* #	US-PATENT-CLASS-356-152	c 16	N72-13437* #	US-PATENT-CLASS-356-351	c 35	N81-33448* #
US-PATENT-CLASS-350-36	c 14	N72-22441* #	US-PATENT-CLASS-356-152	c 14	N72-20379* #	US-PATENT-CLASS-356-352	c 74	N81-17888* #
US-PATENT-CLASS-350-370	c 35	N81-33448* #	US-PATENT-CLASS-356-152	c 14	N72-27409* #	US-PATENT-CLASS-356-356	c 36	N81-24422* #
US-PATENT-CLASS-350-453	c 36	N82-32712* #	US-PATENT-CLASS-356-152	c 14	N73-25462* #	US-PATENT-CLASS-356-358	c 74	N81-17888* #
US-PATENT-CLASS-350-49	c 14	N72-22441* #	US-PATENT-CLASS-356-152	c 36	N74-15145* #	US-PATENT-CLASS-356-358	c 36	N81-24422* #
US-PATENT-CLASS-350-52	c 14	N72-22441* #	US-PATENT-CLASS-356-152	c 36	N74-21091* #	US-PATENT-CLASS-356-369	c 35	N80-28687* #
US-PATENT-CLASS-350-52	c 14	N72-22444* #	US-PATENT-CLASS-356-152	c 74	N74-21304* #	US-PATENT-CLASS-356-36	c 23	N71-16365* #
US-PATENT-CLASS-350-55	c 23	N71-33229* #	US-PATENT-CLASS-356-152	c 74	N77-22951* #	US-PATENT-CLASS-356-37	c 45	N76-21742* #
US-PATENT-CLASS-350-55	c 14	N73-30393* #	US-PATENT-CLASS-356-152	c 74	N80-21138* #	US-PATENT-CLASS-356-386	c 36	N82-16396* #
US-PATENT-CLASS-350-55	c 23	N73-30666* #	US-PATENT-CLASS-356-152	c 74	N80-21138* #	US-PATENT-CLASS-356-404	c 35	N79-28527* #
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US-PATENT-CLASS-416-149	c 02	N72-11018* #	US-PATENT-CLASS-423-352	c 36	N76-18427* #	US-PATENT-CLASS-427-302	c 74	N78-2854* #
US-PATENT-CLASS-416-153	c 07	N77-14025* #	US-PATENT-CLASS-423-407	c 24	N76-14203* #	US-PATENT-CLASS-427-322	c 34	N77-18382* #
US-PATENT-CLASS-416-157B	c 07	N79-14095* #	US-PATENT-CLASS-423-417	c 26	N80-14229* #	US-PATENT-CLASS-427-322	c 74	N78-2854* #
US-PATENT-CLASS-416-160	c 07	N77-14025* #	US-PATENT-CLASS-423-446	c 15	N73-19457* #	US-PATENT-CLASS-427-327	c 24	N79-17916* #
US-PATENT-CLASS-416-160	c 07	N79-14095* #	US-PATENT-CLASS-423-539	c 25	N82-28368* #	US-PATENT-CLASS-427-328	c 24	N79-17916* #
US-PATENT-CLASS-416-162	c 07	N77-14025* #	US-PATENT-CLASS-423-540	c 25	N82-28368* #	US-PATENT-CLASS-427-343	c 44	N79-11472* #
US-PATENT-CLASS-416-162	c 07	N79-14095* #	US-PATENT-CLASS-423-542	c 25	N82-28368* #	US-PATENT-CLASS-427-34	c 34	N78-18355* #
US-PATENT-CLASS-416-165	c 07	N77-14025* #	US-PATENT-CLASS-423-579	c 46	N74-13011* #	US-PATENT-CLASS-427-34	c 24	N79-17916* #
US-PATENT-CLASS-416-167	c 07	N77-14025* #	US-PATENT-CLASS-423-579	c 25	N82-28368* #	US-PATENT-CLASS-427-34	c 27	N82-29453* #
US-PATENT-CLASS-416-167	c 07	N79-14095* #	US-PATENT-CLASS-423-581	c 25	N79-10162* #	US-PATENT-CLASS-427-350	c 24	N79-25142* #
US-PATENT-CLASS-416-190	c 07	N77-32148* #	US-PATENT-CLASS-423-582	c 26	N78-32229* #	US-PATENT-CLASS-427-355	c 24	N79-17916* #
US-PATENT-CLASS-416-193A	c 07	N77-32148* #	US-PATENT-CLASS-423-583	c 26	N78-32229* #	US-PATENT-CLASS-427-372 2	c 27	N82-33520* #
US-PATENT-CLASS-416-200	c 02	N72-11018* #	US-PATENT-CLASS-423-625	c 15	N73-19457* #	US-PATENT-CLASS-427-372A	c 24	N79-25142* #
US-PATENT-CLASS-416-214A	c 07	N78-33101* #	US-PATENT-CLASS-423-625	c 26	N80-14229* #	US-PATENT-CLASS-427-376A	c 27	N78-32260* #
US-PATENT-CLASS-416-220R	c 07	N77-27116* #	US-PATENT-CLASS-423-644	c 36	N76-18427* #	US-PATENT-CLASS-427-376B	c 27	N78-32260* #
US-PATENT-CLASS-416-220R	c 37	N78-10468* #	US-PATENT-CLASS-423-648R	c 44	N77-22607* #	US-PATENT-CLASS-427-376B	c 24	N79-17916* #
US-PATENT-CLASS-416-221	c 07	N77-27116* #	US-PATENT-CLASS-423-648R	c 28	N78-24365* #	US-PATENT-CLASS-427-376C	c 24	N79-17916* #
US-PATENT-CLASS-416-223	c 07	N74-28226* #	US-PATENT-CLASS-423-648R	c 28	N80-20402* #	US-PATENT-CLASS-427-376	c 27	N76-22377* #
US-PATENT-CLASS-416-224	c 24	N77-19170* #	US-PATENT-CLASS-423-648R	c 28	N81-14103* #	US-PATENT-CLASS-427-376	c 27	N76-23426* #
US-PATENT-CLASS-416-228	c 05	N80-14107* #	US-PATENT-CLASS-423-648R	c 25	N82-28368* #	US-PATENT-CLASS-427-379	c 27	N76-23426* #
US-PATENT-CLASS-416-230	c 24	N77-19170* #	US-PATENT-CLASS-423-650	c 44	N76-18642* #	US-PATENT-CLASS-427-379	c 27	N76-23426* #
US-PATENT-CLASS-416-237	c 07	N74-28226* #	US-PATENT-CLASS-423-650	c 44	N76-29700* #	US-PATENT-CLASS-427-379	c 27	N81-19296* #
US-PATENT-CLASS-416-238	c 05	N80-14107* #	US-PATENT-CLASS-423-650	c 44	N76-29704* #	US-PATENT-CLASS-427-380	c 27	N76-22377* #
US-PATENT-CLASS-416-241A	c 07	N77-32148* #	US-PATENT-CLASS-423-650	c 44	N77-10636* #	US-PATENT-CLASS-427-380	c 27	N76-23426* #
US-PATENT-CLASS-416-244A	c 07	N78-33101* #	US-PATENT-CLASS-423-650	c 28	N80-10374* #	US-PATENT-CLASS-427-380	c 27	N78-32260* #
US-PATENT-CLASS-416-248	c 37	N78-10468* #	US-PATENT-CLASS-423-658 5	c 28	N81-15119* #	US-PATENT-CLASS-427-380	c 27	N81-14078* #
US-PATENT-CLASS-416-25	c 05	N75-12930* #	US-PATENT-CLASS-424-12	c 25	N79-14169* #	US-PATENT-CLASS-427-385 5	c 27	N82-25530* #
US-PATENT-CLASS-416-2	c 44	N79-14527* #	US-PATENT-CLASS-424-12	c 51	N80-18715* #	US-PATENT-CLASS-427-385C	c 44	N78-25530* #
US-PATENT-CLASS-416-500	c 05	N81-19087* #	US-PATENT-CLASS-424-180	c 52	N75-15270* #	US-PATENT-CLASS-427-385C	c 44	N78-25530* #
US-PATENT-CLASS-416-51	c 05	N79-17847* #	US-PATENT-CLASS-424-247	c 52	N81-29764* #	US-PATENT-CLASS-427-386	c 24	N78-27180* #
US-PATENT-CLASS-416-61	c 35	N78-24515* #	US-PATENT-CLASS-424-267	c 52	N81-29764* #	US-PATENT-CLASS-427-387	c 74	N78-2854* #
US-PATENT-CLASS-416-61	c 37	N79-14382* #	US-PATENT-CLASS-424-274	c 52	N81-14613* #	US-PATENT-CLASS-427-388A	c 24	N78-27180* #
US-PATENT-CLASS-416-68	c 05	N79-17847* #	US-PATENT-CLASS-424-274	c 52	N81-29764* #	US-PATENT-CLASS-427-38	c 74	N78-2854* #
US-PATENT-CLASS-416-89	c 05	N79-17847* #	US-PATENT-CLASS-424-3	c 51	N77-27677* #	US-PATENT-CLASS-427-38	c 27	N80-24437* #
US-PATENT-CLASS-417-138	c 35	N75-19611* #	US-PATENT-CLASS-425-DIG 43	c 31	N75-13111* #	US-PATENT-CLASS-427-393 3	c 27	N82-16238* #
US-PATENT-CLASS-417-141	c 44	N76-29701* #	US-PATENT-CLASS-425-113	c 15	N73-13464* #	US-PATENT-CLASS-427-397 7	c 27	N82-33520* #
US-PATENT-CLASS-417-152	c 15	N72-22489* #	US-PATENT-CLASS-425-128	c 31	N74-32920* #	US-PATENT-CLASS-427-398A	c 44	N79-11472* #
US-PATENT-CLASS-417-207	c 44	N76-29701* #	US-PATENT-CLASS-425-133	c 15	N73-13464* #	US-PATENT-CLASS-427-399	c 44	N79-11472* #
US-PATENT-CLASS-417-209	c 34	N76-17317* #	US-PATENT-CLASS-425-176	c 15	N73-13464* #	US-PATENT-CLASS-427-402	c 27	N76-22377* #
US-PATENT-CLASS-417-209	c 44	N76-29701* #	US-PATENT-CLASS-425-288	c 31	N74-32917* #	US-PATENT-CLASS-427-402	c 27	N76-23426* #
US-PATENT-CLASS-417-225	c 35	N78-10428* #	US-PATENT-CLASS-425-35	c 31	N74-32917* #	US-PATENT-CLASS-427-405	c 34	N78-18355* #
US-PATENT-CLASS-417-36	c 35	N75-19611* #	US-PATENT-CLASS-425-378R	c 31	N81-15154* #	US-PATENT-CLASS-427-405	c 27	N82-28441* #
US-PATENT-CLASS-417-379	c 44	N76-29701* #	US-PATENT-CLASS-425-405R	c 31	N75-13111* #	US-PATENT-CLASS-427-40	c 27	N78-31233* #
US-PATENT-CLASS-417-383	c 37	N80-31790* #	US-PATENT-CLASS-425-415	c 31	N74-32920* #	US-PATENT-CLASS-427-40	c 27	N79-18052* #
US-PATENT-CLASS-417-391	c 15	N73-24513* #	US-PATENT-CLASS-425-438	c 31	N75-13111* #	US-PATENT-CLASS-427-40	c 27	N80-24437* #
US-PATENT-CLASS-417-395	c 35	N75-19611* #	US-PATENT-CLASS-425-468	c 31	N75-13111* #	US-PATENT-CLASS-427-419A	c 34	N78-18355* #
US-PATENT-CLASS-417-470	c 35	N74-15126* #	US-PATENT-CLASS-425-6	c 31	N81-33319* #	US-PATENT-CLASS-427-41	c 27	N78-31233* #
US-PATENT-CLASS-417-471	c 35	N74-15126* #	US-PATENT-CLASS-425-6	c 27	N82-28442* #	US-PATENT-CLASS-427-41	c 74	N78-32854* #
US-PATENT-CLASS-417-50	c 15	N71-27084* #	US-PATENT-CLASS-425-77	c 15	N72-20446* #	US-PATENT-CLASS-427-41	c 27	N79-14214* #
US-PATENT-CLASS-417-52	c 37	N74-27904* #	US-PATENT-CLASS-427-113	c 44	N76-28635* #	US-PATENT-CLASS-427-41	c 27	N79-18052* #
US-PATENT-CLASS-417-88	c 44	N78-32539* #	US-PATENT-CLASS-427-113	c 44	N76-24609* #	US-PATENT-CLASS-427-41	c 27	N80-23452* #
US-PATENT-CLASS-418-113	c 37	N82-16408* #	US-PATENT-CLASS-427-115	c 25	N82-21268* #	US-PATENT-CLASS-427-423	c 34	N78-18355* #
US-PATENT-CLASS-418-142	c 37	N82-16408* #	US-PATENT-CLASS-427-123	c 44	N79-11472* #	US-PATENT-CLASS-427-423	c 27	N82-29453* #
US-PATENT-CLASS-42-1F	c 11	N72-22247* #	US-PATENT-CLASS-427-124	c 37	N78-13436* #	US-PATENT-CLASS-427-425	c 37	N82-24492* #
US-PATENT-CLASS-42-215	c 44	N76-29704* #	US-PATENT-CLASS-427-126	c 37	N78-13436* #	US-PATENT-CLASS-427-426	c 27	N76-15310* #
US-PATENT-CLASS-420-445	c 26	N82-31505* #	US-PATENT-CLASS-427-126	c 44	N79-11472* #	US-PATENT-CLASS-427-427	c 24	N78-24290* #
US-PATENT-CLASS-420-551	c 26	N82-31505* #	US-PATENT-CLASS-427-130	c 44	N77-32583* #	US-PATENT-CLASS-427-429	c 27	N81-14078* #
US-PATENT-CLASS-420-588	c 26	N82-31505* #	US-PATENT-CLASS-427-140	c 27	N82-33520* #	US-PATENT-CLASS-427-44	c 74	N78-32854* #
US-PATENT-CLASS-422-109	c 54	N81-24724* #	US-PATENT-CLASS-427-160	c 34	N77-18382* #	US-PATENT-CLASS-427-44	c 27	N80-32516* #
US-PATENT-CLASS-422-186	c 25	N82-28368* #	US-PATENT-CLASS-427-160	c 44	N78-19599* #	US-PATENT-CLASS-427-47	c 44	N77-32583* #
US-PATENT-CLASS-422-187	c 37	N80-10494* #	US-PATENT-CLASS-427-162	c 12	N76-15189* #	US-PATENT-CLASS-427-4	c 51	N77-27677* #
US-PATENT-CLASS-422-198	c 25	N82-28368* #	US-PATENT-CLASS-427-164	c 27	N78-14164* #	US-PATENT-CLASS-427-531	c 44	N82-28780* #
US-PATENT-CLASS-422-199	c 37	N80-10494* #	US-PATENT-CLASS-427-164	c 27	N78-31233* #	US-PATENT-CLASS-427-74	c 44	N78-28780* #
US-PATENT-CLASS-422-208	c 37	N80-10494* #	US-PATENT-CLASS-427-164	c 74	N78-32854* #	US-PATENT-CLASS-427-75	c 44	N78-25527* #
US-PATENT-CLASS-422-224	c 31	N80-18231* #	US-PATENT-CLASS-427-164	c 27	N80-24437* #	US-PATENT-CLASS-427-75	c 44	N79-11472* #
US-PATENT-CLASS-422-235	c 37	N80-10494* #	US-PATENT-CLASS-427-196	c 27	N76-15310* #	US-PATENT-CLASS-427-75	c 44	N79-11472* #
US-PATENT-CLASS-422-242	c 37	N80-10494* #	US-PATENT-CLASS-427-203	c 27	N76-16229* #	US-PATENT-CLASS-427-84	c 44	N79-11472* #
US-PATENT-CLASS-422-248	c 76	N80-32244* #	US-PATENT-CLASS-427-204	c 27	N76-16229* #	US-PATENT-CLASS-427-86	c 44	N76-28635* #
US-PATENT-CLASS-422-246	c 33	N81-19389* #	US-PATENT-CLASS-427-205	c 27	N76-16229* #	US-PATENT-CLASS-427-86	c 44	N78-24609* #
US-PATENT-CLASS-422-246	c 76	N82-30105* #	US-PATENT-CLASS-427-205	c 27	N82-28441* #	US-PATENT-CLASS-427-88	c 44	N79-31752* #
US-PATENT-CLASS-422-249	c 33	N81-19389* #	US-PATENT-CLASS-427-215	c 27	N78-32260* #	US-PATENT-CLASS-427-95	c 25	N79-28253* #
US-PATENT-CLASS-422-27	c 54	N81-24724* #	US-PATENT-CLASS-427-221	c 27	N81-19296* #	US-PATENT-CLASS-428-109	c 27	N76-14264* #
US-PATENT-CLASS-422-30	c 54	N81-24724* #	US-PATENT-CLASS-427-229	c 25	N78-10225* #	US-PATENT-CLASS-428-109	c 33	N79-12331* #
US-PATENT-CLASS-422-34	c 54	N81-2472						



US-PATENT-CLASS-428-116	c 24	N78-10214* #	US-PATENT-CLASS-428-416	c 27	N76-14264* #	US-PATENT-CLASS-428-911	c 24	N77-27188* #
US-PATENT-CLASS-428-116	c 24	N78-17149* #	US-PATENT-CLASS-428-418	c 24	N77-27188* #	US-PATENT-CLASS-428-913	c 34	N78-25350* #
US-PATENT-CLASS-428-117	c 37	N76-24575* #	US-PATENT-CLASS-428-418	c 15	N79-26100* #	US-PATENT-CLASS-428-920	c 27	N76-16230* #
US-PATENT-CLASS-428-117	c 24	N78-15180* #	US-PATENT-CLASS-428-421	c 34	N77-18382* #	US-PATENT-CLASS-428-920	c 27	N76-22377* #
US-PATENT-CLASS-428-117	c 24	N79-16915* #	US-PATENT-CLASS-428-421	c 15	N79-26100* #	US-PATENT-CLASS-428-920	c 27	N76-23426* #
US-PATENT-CLASS-428-119	c 24	N79-16915* #	US-PATENT-CLASS-428-421	c 27	N80-24437* #	US-PATENT-CLASS-428-920	c 24	N78-15180* #
US-PATENT-CLASS-428-133	c 37	N79-10422* #	US-PATENT-CLASS-428-422	c 27	N78-31233* #	US-PATENT-CLASS-428-920	c 27	N78-32260* #
US-PATENT-CLASS-428-137	c 24	N79-25142* #	US-PATENT-CLASS-428-425	c 24	N77-28225* #	US-PATENT-CLASS-428-920	c 24	N79-12221* #
US-PATENT-CLASS-428-138	c 24	N78-10214* #	US-PATENT-CLASS-428-426	c 74	N78-15879* #	US-PATENT-CLASS-428-920	c 15	N79-25142* #
US-PATENT-CLASS-428-139	c 23	N81-29160* #	US-PATENT-CLASS-428-427	c 27	N78-32260* #	US-PATENT-CLASS-428-921	c 27	N81-27272* #
US-PATENT-CLASS-428-140	c 24	N81-14000* #	US-PATENT-CLASS-428-428	c 27	N76-22377* #	US-PATENT-CLASS-428-921	c 27	N76-16230* #
US-PATENT-CLASS-428-141	c 24	N77-28225* #	US-PATENT-CLASS-428-428	c 27	N76-23426* #	US-PATENT-CLASS-428-921	c 24	N78-27180* #
US-PATENT-CLASS-428-141	c 27	N82-33521* #	US-PATENT-CLASS-428-428	c 74	N78-15879* #	US-PATENT-CLASS-428-922	c 24	N81-13999* #
US-PATENT-CLASS-428-141	c 24	N77-28225* #	US-PATENT-CLASS-428-428	c 27	N78-32260* #	US-PATENT-CLASS-428-922	c 27	N78-14164* #
US-PATENT-CLASS-428-161	c 27	N79-12221* #	US-PATENT-CLASS-428-446	c 27	N82-29456* #	US-PATENT-CLASS-428-938	c 27	N82-28441* #
US-PATENT-CLASS-428-189	c 27	N82-24339* #	US-PATENT-CLASS-428-446	c 27	N76-14264* #	US-PATENT-CLASS-428-941	c 34	N78-25350* #
US-PATENT-CLASS-428-192	c 27	N82-24339* #	US-PATENT-CLASS-428-447	c 27	N76-16230* #	US-PATENT-CLASS-428-94	c 34	N78-25350* #
US-PATENT-CLASS-428-193	c 27	N76-14264* #	US-PATENT-CLASS-428-447	c 27	N78-31233* #	US-PATENT-CLASS-428-95	c 34	N78-25350* #
US-PATENT-CLASS-428-212	c 27	N79-12221* #	US-PATENT-CLASS-428-447	c 74	N78-32854* #	US-PATENT-CLASS-428-96	c 34	N78-25350* #
US-PATENT-CLASS-428-212	c 27	N82-29456* #	US-PATENT-CLASS-428-447	c 27	N79-12221* #	US-PATENT-CLASS-428-97	c 34	N78-25350* #
US-PATENT-CLASS-428-214	c 27	N76-14264* #	US-PATENT-CLASS-428-447	c 27	N79-18052* #	US-PATENT-CLASS-429-101	c 44	N79-17313* #
US-PATENT-CLASS-428-218	c 27	N82-29456* #	US-PATENT-CLASS-428-447	c 24	N79-25142* #	US-PATENT-CLASS-429-101	c 44	N79-26474* #
US-PATENT-CLASS-428-220	c 15	N79-26100* #	US-PATENT-CLASS-428-447	c 27	N82-24339* #	US-PATENT-CLASS-429-101	c 33	N80-20487* #
US-PATENT-CLASS-428-241	c 27	N82-24339* #	US-PATENT-CLASS-428-448	c 27	N82-24339* #	US-PATENT-CLASS-429-105	c 44	N77-22606* #
US-PATENT-CLASS-428-242	c 27	N82-24339* #	US-PATENT-CLASS-428-450	c 27	N76-16229* #	US-PATENT-CLASS-429-105	c 33	N80-20487* #
US-PATENT-CLASS-428-245	c 27	N79-12331* #	US-PATENT-CLASS-428-450	c 27	N78-22377* #	US-PATENT-CLASS-429-107	c 44	N77-22606* #
US-PATENT-CLASS-428-247	c 33	N82-26571* #	US-PATENT-CLASS-428-450	c 27	N76-23426* #	US-PATENT-CLASS-429-107	c 33	N80-20487* #
US-PATENT-CLASS-428-247	c 33	N82-24339* #	US-PATENT-CLASS-428-450	c 27	N79-12221* #	US-PATENT-CLASS-429-109	c 33	N80-20487* #
US-PATENT-CLASS-428-251	c 27	N82-24339* #	US-PATENT-CLASS-428-451	c 27	N79-18052* #	US-PATENT-CLASS-429-120	c 44	N81-24521* #
US-PATENT-CLASS-428-257	c 33	N79-12331* #	US-PATENT-CLASS-428-457	c 27	N76-16229* #	US-PATENT-CLASS-429-139	c 27	N80-32516* #
US-PATENT-CLASS-428-258	c 33	N79-12331* #	US-PATENT-CLASS-428-457	c 24	N77-27188* #	US-PATENT-CLASS-429-139	c 27	N81-24527* #
US-PATENT-CLASS-428-259	c 33	N81-27272* #	US-PATENT-CLASS-428-457	c 24	N77-28225* #	US-PATENT-CLASS-429-13	c 44	N79-10513* #
US-PATENT-CLASS-428-260	c 27	N82-24339* #	US-PATENT-CLASS-428-457	c 26	N82-30371* #	US-PATENT-CLASS-429-144	c 44	N82-29708* #
US-PATENT-CLASS-428-260	c 27	N82-16238* #	US-PATENT-CLASS-428-458	c 24	N77-28225* #	US-PATENT-CLASS-429-15	c 44	N79-26474* #
US-PATENT-CLASS-428-263	c 27	N82-16238* #	US-PATENT-CLASS-428-458	c 24	N79-16915* #	US-PATENT-CLASS-429-160	c 44	N81-24521* #
US-PATENT-CLASS-428-264	c 27	N82-16238* #	US-PATENT-CLASS-428-461	c 34	N77-18382* #	US-PATENT-CLASS-429-164	c 44	N81-24521* #
US-PATENT-CLASS-428-265	c 27	N82-24339* #	US-PATENT-CLASS-428-462	c 27	N82-24340* #	US-PATENT-CLASS-429-190	c 44	N77-22606* #
US-PATENT-CLASS-428-266	c 27	N82-16238* #	US-PATENT-CLASS-428-466	c 27	N82-24340* #	US-PATENT-CLASS-429-193	c 44	N82-29710* #
US-PATENT-CLASS-428-267	c 27	N82-16238* #	US-PATENT-CLASS-428-469	c 27	N76-16229* #	US-PATENT-CLASS-429-23	c 44	N77-14581* #
US-PATENT-CLASS-428-272	c 27	N79-12221* #	US-PATENT-CLASS-428-471	c 26	N81-25188* #	US-PATENT-CLASS-429-249	c 27	N81-24257* #
US-PATENT-CLASS-428-280	c 27	N79-25142* #	US-PATENT-CLASS-428-472	c 26	N82-30371* #	US-PATENT-CLASS-429-249	c 23	N81-29160* #
US-PATENT-CLASS-428-282	c 24	N82-29362* #	US-PATENT-CLASS-428-473	c 27	N81-14078* #	US-PATENT-CLASS-429-251	c 44	N82-29708* #
US-PATENT-CLASS-428-283	c 27	N82-29456* #	US-PATENT-CLASS-428-473	c 27	N81-29229* #	US-PATENT-CLASS-429-253	c 44	N79-25481* #
US-PATENT-CLASS-428-284	c 24	N82-29362* #	US-PATENT-CLASS-428-474	c 34	N77-18382* #	US-PATENT-CLASS-429-253	c 27	N81-24257* #
US-PATENT-CLASS-428-284	c 27	N79-12221* #	US-PATENT-CLASS-428-474	c 27	N79-33316* #	US-PATENT-CLASS-429-253	c 23	N81-29160* #
US-PATENT-CLASS-428-285	c 27	N79-12221* #	US-PATENT-CLASS-428-474	c 27	N80-24437* #	US-PATENT-CLASS-429-254	c 44	N78-25530* #
US-PATENT-CLASS-428-286	c 24	N82-29362* #	US-PATENT-CLASS-428-480	c 24	N81-14000* #	US-PATENT-CLASS-429-254	c 44	N82-29708* #
US-PATENT-CLASS-428-286	c 24	N82-29362* #	US-PATENT-CLASS-428-493	c 27	N82-24340* #	US-PATENT-CLASS-429-27	c 27	N81-24257* #
US-PATENT-CLASS-428-287	c 24	N82-29362* #	US-PATENT-CLASS-428-493	c 27	N82-24339* #	US-PATENT-CLASS-429-27	c 23	N81-29160* #
US-PATENT-CLASS-428-288	c 24	N82-29456* #	US-PATENT-CLASS-428-498	c 27	N82-29456* #	US-PATENT-CLASS-429-28	c 27	N81-24257* #
US-PATENT-CLASS-428-289	c 27	N78-15180* #	US-PATENT-CLASS-428-500	c 27	N80-32516* #	US-PATENT-CLASS-429-28	c 23	N81-29160* #
US-PATENT-CLASS-428-290	c 24	N79-25142* #	US-PATENT-CLASS-428-515	c 27	N78-31233* #	US-PATENT-CLASS-429-33	c 44	N79-17313* #
US-PATENT-CLASS-428-290	c 24	N78-17150* #	US-PATENT-CLASS-428-522	c 27	N78-14164* #	US-PATENT-CLASS-429-33	c 44	N82-29710* #
US-PATENT-CLASS-428-294	c 24	N77-27188* #	US-PATENT-CLASS-428-523	c 27	N78-31233* #	US-PATENT-CLASS-429-34	c 44	N77-14581* #
US-PATENT-CLASS-428-301	c 24	N78-17150* #	US-PATENT-CLASS-428-528	c 24	N81-13999* #	US-PATENT-CLASS-429-40	c 44	N82-29710* #
US-PATENT-CLASS-428-302	c 27	N76-15310* #	US-PATENT-CLASS-428-538	c 27	N76-22377* #	US-PATENT-CLASS-429-41	c 44	N79-10513* #
US-PATENT-CLASS-428-303	c 27	N82-29456* #	US-PATENT-CLASS-428-538	c 27	N76-23426* #	US-PATENT-CLASS-429-42	c 44	N79-10513* #
US-PATENT-CLASS-428-307	c 27	N82-29456* #	US-PATENT-CLASS-428-538	c 27	N78-31233* #	US-PATENT-CLASS-429-44	c 44	N81-24521* #
US-PATENT-CLASS-428-311	c 27	N82-29456* #	US-PATENT-CLASS-428-539	c 27	N76-16229* #	US-PATENT-CLASS-430-17	c 35	N82-11432* #
US-PATENT-CLASS-428-312	c 27	N78-32260* #	US-PATENT-CLASS-428-541	c 24	N81-13999* #	US-PATENT-CLASS-430-271	c 27	N81-25209* #
US-PATENT-CLASS-428-313	c 24	N78-27180* #	US-PATENT-CLASS-428-593	c 24	N82-24296* #	US-PATENT-CLASS-430-325	c 27	N81-25209* #
US-PATENT-CLASS-428-317	c 27	N82-29456* #	US-PATENT-CLASS-428-594	c 24	N82-24296* #	US-PATENT-CLASS-430-329	c 27	N81-25209* #
US-PATENT-CLASS-428-325	c 27	N78-32260* #	US-PATENT-CLASS-428-594	c 24	N82-32417* #	US-PATENT-CLASS-430-330	c 27	N81-25209* #
US-PATENT-CLASS-428-325	c 27	N82-29456* #	US-PATENT-CLASS-428-604	c 24	N82-24296* #	US-PATENT-CLASS-430-372	c 35	N82-11432* #
US-PATENT-CLASS-428-328	c 24	N77-27188* #	US-PATENT-CLASS-428-604	c 24	N82-32417* #	US-PATENT-CLASS-431-10	c 34	N78-27357* #
US-PATENT-CLASS-428-331	c 27	N78-32260* #	US-PATENT-CLASS-428-607	c 24	N82-32417* #	US-PATENT-CLASS-431-10	c 25	N79-11151* #
US-PATENT-CLASS-428-332	c 27	N76-22377* #	US-PATENT-CLASS-428-608	c 24	N82-32417* #	US-PATENT-CLASS-431-116	c 44	N77-10636* #
US-PATENT-CLASS-428-332	c 27	N76-23426* #	US-PATENT-CLASS-428-629	c 44	N80-16452* #	US-PATENT-CLASS-431-11	c 44	N77-10636* #
US-PATENT-CLASS-428-332	c 24	N78-27180* #	US-PATENT-CLASS-428-632	c 26	N81-25188* #	US-PATENT-CLASS-431-158	c 25	N78-10224* #
US-PATENT-CLASS-428-332	c 27	N79-12221* #	US-PATENT-CLASS-428-633	c 34	N78-18355* #	US-PATENT-CLASS-431-162	c 44	N77-10636* #
US-PATENT-CLASS-428-332	c 24	N79-25142* #	US-PATENT-CLASS-428-650	c 44	N80-16452* #	US-PATENT-CLASS-431-163	c 44	N76-29704* #
US-PATENT-CLASS-428-332	c 27	N82-24340* #	US-PATENT-CLASS-428-652	c 34	N78-18355* #	US-PATENT-CLASS-431-170	c 44	N77-10636* #
US-PATENT-CLASS-428-334	c 74	N78-15879* #	US-PATENT-CLASS-428-652	c 44	N78-19599* #	US-PATENT-CLASS-431-173	c 23	N73-30665* #
US-PATENT-CLASS-428-336	c 74	N78-15879* #	US-PATENT-CLASS-428-658	c 44	N80-16452* #	US-PATENT-CLASS-431-202	c 25	N74-33378* #
US-PATENT-CLASS-428-339	c 27	N82-24340* #	US-PATENT-CLASS-428-667	c 34	N78-18355* #	US-PATENT-CLASS-431-208	c 25	N79-11151* #
US-PATENT-CLASS-428-341	c 27	N78-32260* #	US-PATENT-CLASS-428-667	c 44	N78-19599* #	US-PATENT-CLASS-431-210	c 44	N76-29704* #
US-PATENT-CLASS-428-35	c 34	N77-18382* #	US-PATENT-CLASS-428-675	c 44	N80-16452* #	US-PATENT-CLASS-431-2	c 07	N81-29129* #
US-PATENT-CLASS-428-366	c 24	N79-24062* #	US-PATENT-CLASS-428-678	c 26	N81-25188* #	US-PATENT-CLASS-431-328	c 34	N78-27357* #
US-PATENT-CLASS-428-367	c 27	N81-27272* #	US-PATENT-CLASS-428-679	c 44	N78-19599* #	US-PATENT-CLASS-431-352	c 28	N71-28915* #
US-PATENT-CLASS-428-368	c 24	N77-27188* #	US-PATENT-CLASS-428-679	c 26	N81-25188* #	US-PATENT-CLASS-431-352	c 25	N78-10224* #
US-PATENT-CLASS-428-375	c 24	N79-16915* #	US-PATENT-CLASS-428-680	c 44	N80-16452* #	US-PATENT-CLASS-431-41	c 44	N77-10636* #
US-PATENT-CLASS-428-406	c 27	N78-32260* #	US-PATENT-CLASS-428-680	c 26	N81-25188* #	US-PATENT-CLASS-431-4	c 44	N76-29704* #
US-PATENT-CLASS-428-406	c 27	N81-27272* #	US-PATENT-CLASS-428-71	c 24	N78-15180* #	US-PATENT-CLASS-431-7	c 34	N78-27357* #
US-PATENT-CLASS-428-411	c 27	N78-14164* #	US-PATENT-CLASS-428-73	c 24	N78-10214* #	US-PATENT-CLASS-431-9	c 23	N73-30665* #
US-PATENT-CLASS-428-411	c 27	N78-31233* #	US-PATENT-CLASS-428-73	c 24	N78-15180* #	US-PATENT-CLASS-432-223	c 25	N79-11151* #
US-PATENT-CLASS-428-411	c 27	N79-14214* #	US-PATENT-CLASS-428-73	c 24	N79-16915* #	US-PATENT-CLASS-432-264	c 33	N81-19389* #
US-PATENT-CLASS-428-412	c 27	N76-16230* #	US-PATENT-CLASS-428-77	c 27	N76-14264* #	US-PATENT-CLASS-432-29	c 25	N79-11151* #
US-PATENT-CLASS-428-412	c 27	N78-31233* #	US-PATENT-CLASS-428-902	c 27	N79-12221* #	US-PATENT-CLASS-433-118	c 52	N82-29862* #
US-PATENT-CLASS-428-412	c 74	N78-32854* #	US-PATENT-CLASS-428-902	c 24	N77-27188* #	US-PATENT-CLASS-433-125	c 52	N82-29862* #
US-PATENT-CLASS-428-412	c 27	N79-18052* #	US-PATENT-CLASS-428-902	c 24	N78-17149* #	US-PATENT-CLASS-433-86	c 52	N82-29862* #
US-PATENT-CLASS-428-413	c 27	N76-16230* #	US-PATENT-CLASS-428-902	c 24	N81-14000* #	US-PATENT-CLASS-434-42	c 09	N82-24212* #
US-PATENT-CLASS-428-413	c 15	N79-26100* #	US-PATENT-CLASS-428-902	c 31	N81-25258* #	US-PATENT-CLASS-434-43	c 09	N82-24212* #
US-PATENT-CLASS-428-413	c 24	N81-14000* #	US-PATENT-CLASS-428-902	c 27	N81-27272* #	US-PATENT-CLASS-434-59	c 54	N81-27806* #
US-PATENT-CLASS-428-414	c 15	N79-26100* #						



US-PATENT-CLASS-435-290	c 51	N80-27067* #	US-PATENT-CLASS-52-111	c 31	N81-27324* #	US-PATENT-CLASS-528-173	c 27	N82-11206* #
US-PATENT-CLASS-435-291	c 51	N80-27067* #	US-PATENT-CLASS-52-117	c 44	N77-32582* #	US-PATENT-CLASS-528-180	c 27	N82-11206* #
US-PATENT-CLASS-435-291	c 51	N81-28698* #	US-PATENT-CLASS-52-127	c 15	N71-21531* #	US-PATENT-CLASS-528-207	c 27	N80-16158* #
US-PATENT-CLASS-435-291	c 35	N82-28604* #	US-PATENT-CLASS-52-169	c 15	N72-25454* #	US-PATENT-CLASS-528-207	c 27	N82-11206* #
US-PATENT-CLASS-435-311	c 51	N80-27067* #	US-PATENT-CLASS-52-171	c 11	N73-12265* #	US-PATENT-CLASS-528-208	c 27	N80-16158* #
US-PATENT-CLASS-435-316	c 51	N80-27067* #	US-PATENT-CLASS-52-173R	c 44	N77-31601* #	US-PATENT-CLASS-528-208	c 27	N82-11206* #
US-PATENT-CLASS-435-32	c 51	N80-27067* #	US-PATENT-CLASS-52-173	c 15	N72-25454* #	US-PATENT-CLASS-528-210	c 27	N82-11206* #
US-PATENT-CLASS-435-34	c 51	N80-16714* #	US-PATENT-CLASS-52-232	c 37	N81-14317* #	US-PATENT-CLASS-528-221	c 27	N82-11206* #
US-PATENT-CLASS-435-34	c 51	N80-27067* #	US-PATENT-CLASS-52-236	c 39	N76-31562* #	US-PATENT-CLASS-528-222	c 27	N81-29229* #
US-PATENT-CLASS-435-34	c 51	N81-28698* #	US-PATENT-CLASS-52-249	c 33	N71-25351* #	US-PATENT-CLASS-528-222	c 27	N79-28307* #
US-PATENT-CLASS-435-34	c 35	N82-28604* #	US-PATENT-CLASS-52-272	c 31	N71-24035* #	US-PATENT-CLASS-528-225	c 27	N79-28307* #
US-PATENT-CLASS-435-38	c 51	N80-27067* #	US-PATENT-CLASS-52-284	c 32	N73-13921* #	US-PATENT-CLASS-528-225	c 27	N82-11206* #
US-PATENT-CLASS-435-39	c 51	N80-27067* #	US-PATENT-CLASS-52-2	c 32	N71-21045* #	US-PATENT-CLASS-528-227	c 27	N79-28307* #
US-PATENT-CLASS-435-39	c 35	N82-28604* #	US-PATENT-CLASS-52-309.1	c 31	N81-25258* #	US-PATENT-CLASS-528-228	c 27	N81-27272* #
US-PATENT-CLASS-435-3	c 51	N80-27067* #	US-PATENT-CLASS-52-3	c 31	N71-16080* #	US-PATENT-CLASS-528-228	c 27	N82-11206* #
US-PATENT-CLASS-435-5	c 51	N81-28698* #	US-PATENT-CLASS-52-404	c 33	N71-25351* #	US-PATENT-CLASS-528-229	c 27	N79-28307* #
US-PATENT-CLASS-44-1R	c 44	N78-31527* #	US-PATENT-CLASS-52-51	c 44	N77-31601* #	US-PATENT-CLASS-528-229	c 27	N79-33316* #
US-PATENT-CLASS-44-1R	c 25	N81-33246* #	US-PATENT-CLASS-52-573	c 15	N72-28496* #	US-PATENT-CLASS-528-229	c 27	N81-29229* #
US-PATENT-CLASS-44-1SR	c 25	N80-27067* #	US-PATENT-CLASS-52-594	c 15	N72-25454* #	US-PATENT-CLASS-528-310	c 27	N81-17262* #
US-PATENT-CLASS-44-2	c 44	N78-31527* #	US-PATENT-CLASS-52-594	c 32	N73-13921* #	US-PATENT-CLASS-528-310	c 27	N81-24256* #
US-PATENT-CLASS-44-2	c 25	N81-33246* #	US-PATENT-CLASS-52-632	c 31	N81-27324* #	US-PATENT-CLASS-528-310	c 27	N82-24338* #
US-PATENT-CLASS-44-50	c 27	N81-17261* #	US-PATENT-CLASS-52-637	c 39	N76-31562* #	US-PATENT-CLASS-528-322	c 27	N81-17260* #
US-PATENT-CLASS-44-51	c 25	N79-11152* #	US-PATENT-CLASS-52-645	c 31	N81-25259* #	US-PATENT-CLASS-528-322	c 27	N82-24338* #
US-PATENT-CLASS-44-62	c 27	N81-17261* #	US-PATENT-CLASS-52-646	c 31	N73-32749* #	US-PATENT-CLASS-528-331	c 27	N79-28307* #
US-PATENT-CLASS-44-7R	c 28	N81-14103* #	US-PATENT-CLASS-52-648	c 11	N72-25287* #	US-PATENT-CLASS-528-336	c 27	N79-28307* #
US-PATENT-CLASS-44-77	c 06	N71-23499* #	US-PATENT-CLASS-52-648	c 39	N76-31562* #	US-PATENT-CLASS-528-337	c 27	N79-28307* #
US-PATENT-CLASS-455-102	c 33	N81-15192* #	US-PATENT-CLASS-52-648	c 31	N81-25258* #	US-PATENT-CLASS-528-338	c 27	N79-28307* #
US-PATENT-CLASS-455-137	c 35	N82-15381* #	US-PATENT-CLASS-52-64	c 31	N73-32749* #	US-PATENT-CLASS-528-342	c 27	N79-28307* #
US-PATENT-CLASS-455-139	c 35	N82-15381* #	US-PATENT-CLASS-52-651	c 39	N76-31562* #	US-PATENT-CLASS-528-351	c 27	N82-11206* #
US-PATENT-CLASS-455-202	c 33	N82-29539* #	US-PATENT-CLASS-52-655	c 11	N72-25287* #	US-PATENT-CLASS-528-353	c 27	N81-19296* #
US-PATENT-CLASS-455-208	c 33	N82-29539* #	US-PATENT-CLASS-52-705	c 37	N76-19437* #	US-PATENT-CLASS-528-353	c 27	N82-11206* #
US-PATENT-CLASS-455-234	c 33	N81-29308* #	US-PATENT-CLASS-52-71	c 18	N75-27040* #	US-PATENT-CLASS-528-362	c 25	N81-14016* #
US-PATENT-CLASS-455-278	c 32	N82-29539* #	US-PATENT-CLASS-52-726	c 39	N76-31562* #	US-PATENT-CLASS-528-362	c 27	N81-17259* #
US-PATENT-CLASS-455-306	c 33	N82-29539* #	US-PATENT-CLASS-52-726	c 31	N81-25258* #	US-PATENT-CLASS-528-362	c 27	N81-17262* #
US-PATENT-CLASS-455-51	c 32	N81-14186* #	US-PATENT-CLASS-52-743	c 37	N81-14317* #	US-PATENT-CLASS-528-362	c 27	N82-24338* #
US-PATENT-CLASS-455-60	c 35	N82-15381* #	US-PATENT-CLASS-52-745	c 39	N76-31562* #	US-PATENT-CLASS-528-399	c 27	N81-27271* #
US-PATENT-CLASS-455-610	c 74	N82-19029* #	US-PATENT-CLASS-52-745	c 31	N81-27323* #	US-PATENT-CLASS-528-399	c 27	N82-18389* #
US-PATENT-CLASS-455-612	c 74	N82-19029* #	US-PATENT-CLASS-52-749	c 39	N76-31562* #	US-PATENT-CLASS-528-401	c 27	N79-22300* #
US-PATENT-CLASS-455-615	c 74	N82-19029* #	US-PATENT-CLASS-52-758F	c 37	N76-19437* #	US-PATENT-CLASS-528-401	c 25	N81-14016* #
US-PATENT-CLASS-455-617	c 74	N82-19029* #	US-PATENT-CLASS-52-80	c 18	N72-25540* #	US-PATENT-CLASS-528-401	c 27	N81-17259* #
US-PATENT-CLASS-455-619	c 32	N81-14186* #	US-PATENT-CLASS-52-80	c 18	N72-25541* #	US-PATENT-CLASS-528-401	c 27	N81-17262* #
US-PATENT-CLASS-455-71	c 32	N81-14186* #	US-PATENT-CLASS-52-80	c 31	N73-32749* #	US-PATENT-CLASS-528-401	c 27	N82-24338* #
US-PATENT-CLASS-467-28	c 39	N80-10507* #	US-PATENT-CLASS-52-81	c 37	N82-32732* #	US-PATENT-CLASS-528-401	c 23	N82-28353* #
US-PATENT-CLASS-47-1.2	c 51	N75-25503* #	US-PATENT-CLASS-521-124	c 25	N80-16116* #	US-PATENT-CLASS-528-402	c 25	N82-24312* #
US-PATENT-CLASS-47-1.4	c 31	N73-32750* #	US-PATENT-CLASS-521-125	c 25	N80-16116* #	US-PATENT-CLASS-528-422	c 27	N79-22300* #
US-PATENT-CLASS-47-17	c 31	N73-32750* #	US-PATENT-CLASS-521-127	c 25	N80-16116* #	US-PATENT-CLASS-528-422	c 25	N81-14016* #
US-PATENT-CLASS-47-39	c 51	N75-25503* #	US-PATENT-CLASS-521-146	c 25	N80-23383* #	US-PATENT-CLASS-528-422	c 27	N81-17259* #
US-PATENT-CLASS-47-58	c 51	N75-25503* #	US-PATENT-CLASS-521-157	c 25	N80-16116* #	US-PATENT-CLASS-528-422	c 27	N81-17262* #
US-PATENT-CLASS-474-205	c 37	N80-32717* #	US-PATENT-CLASS-521-27	c 27	N81-14076* #	US-PATENT-CLASS-528-422	c 27	N82-24338* #
US-PATENT-CLASS-48-DIG 8	c 28	N80-10374* #	US-PATENT-CLASS-521-32	c 27	N81-14076* #	US-PATENT-CLASS-528-422	c 23	N82-28353* #
US-PATENT-CLASS-48-10-3	c 28	N80-10374* #	US-PATENT-CLASS-521-55	c 25	N80-23383* #	US-PATENT-CLASS-528-423	c 23	N81-17259* #
US-PATENT-CLASS-48-102A	c 28	N80-10374* #	US-PATENT-CLASS-521-62	c 27	N81-14076* #	US-PATENT-CLASS-528-481	c 27	N80-24438* #
US-PATENT-CLASS-48-107	c 28	N80-10374* #	US-PATENT-CLASS-521-918	c 25	N80-23383* #	US-PATENT-CLASS-528-4	c 27	N81-27271* #
US-PATENT-CLASS-48-116	c 44	N76-18642* #	US-PATENT-CLASS-525-326	c 27	N80-24438* #	US-PATENT-CLASS-528-4	c 27	N82-18389* #
US-PATENT-CLASS-48-116	c 44	N77-10636* #	US-PATENT-CLASS-525-336	c 27	N80-24438* #	US-PATENT-CLASS-528-6	c 27	N81-27271* #
US-PATENT-CLASS-48-117	c 44	N76-18642* #	US-PATENT-CLASS-525-340	c 27	N80-24438* #	US-PATENT-CLASS-528-6	c 27	N82-18389* #
US-PATENT-CLASS-48-117	c 44	N77-10636* #	US-PATENT-CLASS-525-374	c 27	N80-24438* #	US-PATENT-CLASS-528-73	c 25	N80-16116* #
US-PATENT-CLASS-48-117	c 28	N80-10374* #	US-PATENT-CLASS-525-375	c 27	N80-24438* #	US-PATENT-CLASS-528-7	c 27	N82-18389* #
US-PATENT-CLASS-48-197R	c 44	N76-29704* #	US-PATENT-CLASS-525-384	c 28	N81-15119* #	US-PATENT-CLASS-528-7	c 15	N71-21528* #
US-PATENT-CLASS-48-197R	c 44	N77-10636* #	US-PATENT-CLASS-525-426	c 27	N80-26446* #	US-PATENT-CLASS-53-102	c 15	N73-27405* #
US-PATENT-CLASS-48-212	c 44	N77-10636* #	US-PATENT-CLASS-525-4	c 25	N80-23383* #	US-PATENT-CLASS-53-112A	c 15	N73-27405* #
US-PATENT-CLASS-48-215	c 44	N76-29700* #	US-PATENT-CLASS-525-56	c 23	N81-29160* #	US-PATENT-CLASS-53-22A	c 15	N73-27405* #
US-PATENT-CLASS-48-61	c 44	N77-10636* #	US-PATENT-CLASS-525-61	c 27	N81-24257* #	US-PATENT-CLASS-53-22	c 15	N71-23256* #
US-PATENT-CLASS-48-61	c 28	N80-10374* #	US-PATENT-CLASS-525-61	c 23	N81-29160* #	US-PATENT-CLASS-53-429	c 09	N82-29330* #
US-PATENT-CLASS-48-63	c 44	N76-18642* #	US-PATENT-CLASS-526-13	c 27	N76-32256* #	US-PATENT-CLASS-53-9	c 37	N77-23482* #
US-PATENT-CLASS-48-75	c 44	N76-18642* #	US-PATENT-CLASS-526-193	c 27	N76-15276* #	US-PATENT-CLASS-536-105	c 27	N77-30236* #
US-PATENT-CLASS-48-89	c 44	N82-16475* #	US-PATENT-CLASS-526-1	c 27	N76-24405* #	US-PATENT-CLASS-536-85	c 27	N77-30236* #
US-PATENT-CLASS-48-95	c 44	N76-18642* #	US-PATENT-CLASS-526-201	c 25	N81-19242* #	US-PATENT-CLASS-536-58	c 27	N77-30236* #
US-PATENT-CLASS-48-95	c 44	N76-29700* #	US-PATENT-CLASS-526-225	c 27	N76-15276* #	US-PATENT-CLASS-536-84	c 27	N77-30236* #
US-PATENT-CLASS-48-99	c 44	N82-16475* #	US-PATENT-CLASS-526-23	c 27	N76-32256* #	US-PATENT-CLASS-538-117	c 27	N81-17260* #
US-PATENT-CLASS-49-DIG 1	c 34	N78-25350* #	US-PATENT-CLASS-526-255	c 27	N76-24405* #	US-PATENT-CLASS-544-193	c 27	N78-15276* #
US-PATENT-CLASS-49-171	c 31	N81-19343* #	US-PATENT-CLASS-526-261	c 27	N80-24438* #	US-PATENT-CLASS-544-193	c 27	N79-28307* #
US-PATENT-CLASS-49-479	c 34	N78-25350* #	US-PATENT-CLASS-526-262	c 27	N81-27272* #	US-PATENT-CLASS-544-195	c 27	N78-32256* #
US-PATENT-CLASS-49-485	c 34	N78-25350* #	US-PATENT-CLASS-526-275	c 27	N76-32256* #	US-PATENT-CLASS-547-131	c 23	N82-28353* #
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US-PATENT-CLASS-73-182	c 35	N74-32878* #	US-PATENT-CLASS-73-379	c 05	N73-30078* #	US-PATENT-CLASS-73-517	c 11	N70-38196* #
US-PATENT-CLASS-73-182	c 35	N76-14429* #	US-PATENT-CLASS-73-379	c 35	N75-15932* #	US-PATENT-CLASS-73-517	c 14	N70-41682* #
US-PATENT-CLASS-73-182	c 02	N80-28300* #	US-PATENT-CLASS-73-382	c 10	N71-13537* #	US-PATENT-CLASS-73-517	c 14	N71-15969* #
US-PATENT-CLASS-73-188	c 06	N80-18036* #	US-PATENT-CLASS-73-382	c 14	N71-17587* #	US-PATENT-CLASS-73-521	c 14	N72-25410* #
US-PATENT-CLASS-73-189	c 20	N71-16281* #	US-PATENT-CLASS-73-384	c 15	N70-37925* #	US-PATENT-CLASS-73-557	c 35	N75-19614* #
US-PATENT-CLASS-73-189	c 02	N71-23007* #	US-PATENT-CLASS-73-388	c 35	N74-32878* #	US-PATENT-CLASS-73-557	c 07	N76-27232* #
US-PATENT-CLASS-73-189	c 14	N71-23726* #	US-PATENT-CLASS-73-389	c 12	N71-24692* #	US-PATENT-CLASS-73-56	c 35	N80-18357* #
US-PATENT-CLASS-73-189	c 14	N73-13415* #	US-PATENT-CLASS-73-38	c 18	N71-24934* #	US-PATENT-CLASS-73-579	c 39	N78-15512* #
US-PATENT-CLASS-73-189	c 14	N73-25460* #	US-PATENT-CLASS-73-398AR	c 52	N74-27566* #	US-PATENT-CLASS-73-579	c 35	N79-10390* #
US-PATENT-CLASS-73-189	c 35	N76-24524* #	US-PATENT-CLASS-73-398AR	c 52	N76-29896* #	US-PATENT-CLASS-73-57	c 14	N71-17584* #
US-PATENT-CLASS-73-189	c 34	N76-27517* #	US-PATENT-CLASS-73-398C	c 14	N72-22438* #	US-PATENT-CLASS-73-57	c 14	N73-14429* #
US-PATENT-CLASS-73-189	c 34	N77-27345* #	US-PATENT-CLASS-73-398C	c 33	N76-21390* #	US-PATENT-CLASS-73-589	c 35	N79-10390* #
US-PATENT-CLASS-73-189	c 34	N79-12359* #	US-PATENT-CLASS-73-398	c 14	N70-34816* #	US-PATENT-CLASS-73-603	c 38	N78-32447* #
US-PATENT-CLASS-73-189	c 06	N80-18036* #	US-PATENT-CLASS-73-398	c 14	N71-21072* #	US-PATENT-CLASS-73-60	c 14	N73-14429* #
US-PATENT-CLASS-73-190H	c 35	N74-22095* #	US-PATENT-CLASS-73-398	c 09	N71-24597* #	US-PATENT-CLASS-73-61 1C	c 23	N77-17161* #
US-PATENT-CLASS-73-190R	c 34	N74-27859* #	US-PATENT-CLASS-73-398	c 14	N73-30394* #	US-PATENT-CLASS-73-61R	c 35	N78-27384* #
US-PATENT-CLASS-73-190R	c 35	N81-19426* #	US-PATENT-CLASS-73-399	c 37	N76-18454* #	US-PATENT-CLASS-73-61	c 14	N71-26199* #
US-PATENT-CLASS-73-190	c 33	N71-15641* #	US-PATENT-CLASS-73-3	c 34	N74-27730* #	US-PATENT-CLASS-73-626	c 52	N79-26771* #
US-PATENT-CLASS-73-190	c 14	N71-22989* #	US-PATENT-CLASS-73-4R	c 35	N74-13132* #	US-PATENT-CLASS-73-630	c 39	N78-15512* #
US-PATENT-CLASS-73-190	c 33	N71-23085* #	US-PATENT-CLASS-73-4R	c 35	N79-14347* #	US-PATENT-CLASS-73-632	c 38	N79-14398* #
US-PATENT-CLASS-73-190	c 33	N71-29051* #	US-PATENT-CLASS-73-4R	c 35	N80-18358* #	US-PATENT-CLASS-73-633	c 52	N79-14751* #
US-PATENT-CLASS-73-194A	c 14	N72-17329* #	US-PATENT-CLASS-73-4V	c 35	N74-15092* #	US-PATENT-CLASS-73-641	c 38	N79-14398* #
US-PATENT-CLASS-73-194EM	c 14	N73-32326* #	US-PATENT-CLASS-73-40 5	c 14	N71-10779* #	US-PATENT-CLASS-73-644	c 38	N79-14398* #
US-PATENT-CLASS-73-194EM	c 35	N74-21018* #	US-PATENT-CLASS-73-40 7	c 15	N71-24910* #	US-PATENT-CLASS-73-644	c 52	N79-14751* #
US-PATENT-CLASS-73-194E	c 14	N73-20478* #	US-PATENT-CLASS-73-40 7	c 14	N71-28992* #	US-PATENT-CLASS-73-646	c 71	N78-14867* #
US-PATENT-CLASS-73-194E	c 05	N73-32015* #	US-PATENT-CLASS-73-40 7	c 35	N74-32878* #	US-PATENT-CLASS-73-647	c 32	N79-24203* #
US-PATENT-CLASS-73-194F	c 14	N72-11365* #	US-PATENT-CLASS-73-400	c 14	N71-23093* #	US-PATENT-CLASS-73-655	c 35	N80-14371* #
US-PATENT-CLASS-73-194M	c 05	N73-32015* #	US-PATENT-CLASS-73-400	c 14	N71-24232* #	US-PATENT-CLASS-73-65	c 14	N71-22992* #
US-PATENT-CLASS-73-194M	c 35	N75-30503* #	US-PATENT-CLASS-73-400	c 35	N79-33450* #	US-PATENT-CLASS-73-661	c 35	N80-14371* #
US-PATENT-CLASS-73-194R	c 34	N76-27517* #	US-PATENT-CLASS-73-401	c 14	N70-34820* #	US-PATENT-CLASS-73-67 1	c 35	N75-12271* #
US-PATENT-CLASS-73-194VS	c 34	N79-12359* #	US-PATENT-CLASS-73-40	c 35	N75-15931* #	US-PATENT-CLASS-73-67 2	c 11	N69-21540* #
US-PATENT-CLASS-73-194	c 14	N70-41994* #	US-PATENT-CLASS-73-40	c 35	N80-18358* #	US-PATENT-CLASS-73-67 2	c 15	N71-18132* #
US-PATENT-CLASS-73-194	c 14	N71-23226* #	US-PATENT-CLASS-73-419	c 14	N71-22752* #	US-PATENT-CLASS-73-67 2	c 14	N72-22440* #
US-PATENT-CLASS-73-194	c 12	N71-26546* #	US-PATENT-CLASS-73-420	c 35	N74-13132* #	US-PATENT-CLASS-73-67 2	c 35	N78-17358* #
US-PATENT-CLASS-73-195	c 35	N75-30503* #	US-PATENT-CLASS-73-421 5R	c 13	N72-25323* #	US-PATENT-CLASS-73-67 3	c 32	N73-26910* #
US-PATENT-CLASS-73-198	c 14	N69-24257* #	US-PATENT-CLASS-73-421 5R	c 14	N73-30395* #	US-PATENT-CLASS-73-67 5R	c 38	N74-15395* #
US-PATENT-CLASS-73-198	c 14	N72-17327* #	US-PATENT-CLASS-73-421 5R	c 52	N74-20728* #	US-PATENT-CLASS-73-67 7	c 39	N77-28511* #
US-PATENT-CLASS-73-1	c 10	N71-13545* #	US-PATENT-CLASS-73-421 5R	c 35	N76-18401* #	US-PATENT-CLASS-73-67 8S	c 35	N74-10415* #
US-PATENT-CLASS-73-1	c 09	N71-22988* #	US-PATENT-CLASS-73-421 5R	c 35	N77-32456* #	US-PATENT-CLASS-73-67 8S	c 38	N74-15130* #
US-PATENT-CLASS-73-204	c 12	N71-17569* #	US-PATENT-CLASS-73-421 5	c 14	N73-12444* #	US-PATENT-CLASS-73-67 9	c 52	N74-20726* #
US-PATENT-CLASS-73-204	c 35	N76-24524* #	US-PATENT-CLASS-73-421R	c 54	N76-14804* #	US-PATENT-CLASS-73-683 31	c 35	N81-29407* #
US-PATENT-CLASS-73-204	c 35	N77-20400* #	US-PATENT-CLASS-73-422GC	c 13	N72-25323* #	US-PATENT-CLASS-73-684 52	c 35	N81-29407* #
US-PATENT-CLASS-73-205L	c 02	N80-20224* #	US-PATENT-CLASS-73-422TC	c 13	N72-25323* #	US-PATENT-CLASS-73-69	c 71	N74-31148* #
US-PATENT-CLASS-73-212	c 14	N70-36824* #	US-PATENT-CLASS-73-422	c 14	N71-20435* #	US-PATENT-CLASS-73-70 2	c 14	N71-10616* #
US-PATENT-CLASS-73-212	c 14	N73-13415* #	US-PATENT-CLASS-73-425 2	c 91	N76-30131* #	US-PATENT-CLASS-73-71 2	c 14	N70-34794* #
US-PATENT-CLASS-73-212	c 35	N76-14429* #	US-PATENT-CLASS-73-425 4R	c 35	N78-27384* #	US-PATENT-CLASS-73-71 3	c 35	N74-15146* #
US-PATENT-CLASS-73-212	c 06	N80-18036* #	US-PATENT-CLASS-73-425 6	c 15	N72-21465* #	US-PATENT-CLASS-73-71 4	c 32	N71-16428* #
US-PATENT-CLASS-73-221	c 35	N75-19611* #	US-PATENT-CLASS-73-432PS	c 76	N75-12810* #	US-PATENT-CLASS-73-71 4	c 32	N71-26681* #
US-PATENT-CLASS-73-228	c 34	N77-27345* #	US-PATENT-CLASS-73-432PS	c 35	N75-33367* #	US-PATENT-CLASS-73-71 5R	c 71	N74-31148* #
US-PATENT-CLASS-73-23 1	c 06	N69-39936* #	US-PATENT-CLASS-73-432PS	c 35	N78-18390* #	US-PATENT-CLASS-73-71 5U	c 38	N74-15395* #
US-PATENT-CLASS-73-23 1	c 06	N72-17094* #	US-PATENT-CLASS-73-432R	c 33	N73-27796* #	US-PATENT-CLASS-73-71 6	c 14	N71-27185* #
US-PATENT-CLASS-73-23 1	c 06	N72-25146* #	US-PATENT-CLASS-73-432R	c 14	N73-28487* #	US-PATENT-CLASS-73-71 6	c 14	N72-27412* #
US-PATENT-CLASS-73-23 1	c 25	N76-18245* #	US-PATENT-CLASS-73-432R	c 91	N76-30131* #	US-PATENT-CLASS-73-71 6	c 14	N73-13416* #
US-PATENT-CLASS-73-23 1	c 23	N77-17161* #	US-PATENT-CLASS-73-432R	c 35	N77-19385* #	US-PATENT-CLASS-73-71 6	c 14	N73-19421* #
US-PATENT-CLASS-73-23	c 14	N71-10774* #	US-PATENT-CLASS-73-432R	c 35	N78-18390* #	US-PATENT-CLASS-73-71 6	c 35	N77-18417* #
US-PATENT-CLASS-73-23	c 05	N71-11202* #	US-PATENT-CLASS-73-432SD	c 11	N72-27262* #	US-PATENT-CLASS-73-714	c 35	N79-14347* #
US-PATENT-CLASS-73-23	c 52	N74-20728* #	US-PATENT-CLASS-73-432SD	c 11	N73-20267* #	US-PATENT-CLASS-73-714	c 34	N79-24285* #
US-PATENT-CLASS-73-23	c 35	N75-29380* #	US-PATENT-CLASS-73-432SD	c 35	N77-18417* #	US-PATENT-CLASS-73-721	c 35	N79-14347* #
US-PATENT-CLASS-73-23	c 25	N78-15210* #	US-PATENT-CLASS-73-432	c 11	N70-34786* #	US-PATENT-CLASS-73-724	c 32	N79-24203* #
US-PATENT-CLASS-73-23	c 35	N78-19465* #	US-PATENT-CLASS-73-432	c 11	N70-38675* #	US-PATENT-CLASS-73-724	c 52	N80-18691* #
US-PATENT-CLASS-73-24	c 06	N69-39733* #	US-PATENT-CLASS-73-432	c 05	N70-42000* #	US-PATENT-CLASS-73-724	c 33	N82-26572* #
US-PATENT-CLASS-73-28	c 14	N73-27376* #	US-PATENT-CLASS-73-432	c 31	N71-16221* #	US-PATENT-CLASS-73-756	c 35	N78-24515* #
US-PATENT-CLASS-73-28	c 14	N73-30395* #	US-PATENT-CLASS-73-432	c 27	N71-16223* #	US-PATENT-CLASS-73-756	c 35	N79-14347* #
US-PATENT-CLASS-73-28	c 35	N76-18401* #	US-PATENT-CLASS-73-432	c 30	N71-17788* #	US-PATENT-CLASS-73-76	c 06	N72-17095* #
US-PATENT-CLASS-73-28	c 35	N78-18390* #	US-PATENT-CLASS-73-432	c 14	N71-23227* #	US-PATENT-CLASS-73-770	c 39	N79-22537* #
US-PATENT-CLASS-73-290B	c 14	N72-11363* #	US-PATENT-CLASS-73-432	c 10	N71-26339* #	US-PATENT-CLASS-73-781	c 52	N80-27072* #
US-PATENT-CLASS-73-290	c 14	N71-10500* #	US-PATENT-CLASS-73-432	c 11	N71-28629* #	US-PATENT-CLASS-73-79	c 14	N72-26161* #
US-PATENT-CLASS-73-290	c 14	N71-21007* #	US-PATENT-CLASS-73-432	c 14	N71-30026* #	US-PATENT-CLASS-73-810	c 39	N79-22537* #
US-PATENT-CLASS-73-295	c 23	N71-17802* #	US-PATENT-CLASS-73-45 5	c 35	N74-21062* #	US-PATENT-CLASS-73-81	c 14	N73-32321* #
US-PATENT-CLASS-73-295	c 31	N76-14284* #	US-PATENT-CLASS-73-456	c 12	N71-17573* #	US-PATENT-CLASS-73-82	c 43	N79-25443* #
US-PATENT-CLASS-73-29	c 14	N71-17701* #	US-PATENT-CLASS-73-46	c 35	N78-24515* #	US-PATENT-CLASS-73-82	c 43	N80-14423* #
US-PATENT-CLASS-73-29	c 14	N71-20741* #	US-PATENT-CLASS-73-49 2	c 35	N75-1			



US-PATENT-CLASS-73-84	c 14	N73-19420* #	US-PATENT-CLASS-74-594 6	c 37	N74-18127* #	US-PATENT-CLASS-78-1	c 15	N70-33330*
US-PATENT-CLASS-73-84	c 35	N77-27367* #	US-PATENT-CLASS-74-594 7	c 37	N74-18127* #	US-PATENT-CLASS-78-704	c 36	N79-18307* #
US-PATENT-CLASS-73-85	c 14	N72-33377* #	US-PATENT-CLASS-74-63	c 15	N71-17692* #	US-PATENT-CLASS-8-DIG 12	c 27	N80-26446* #
US-PATENT-CLASS-73-861 65	c 02	N80-28300* #	US-PATENT-CLASS-74-661	c 37	N80-32716* #	US-PATENT-CLASS-8-DIG 18	c 27	N80-26446* #
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US-PATENT-CLASS-73-861	c 34	N81-26402* #	US-PATENT-CLASS-74-665C	c 37	N80-32716* #	US-PATENT-CLASS-8-150	c 09	N82-29330* #
US-PATENT-CLASS-73-862.08	c 54	N82-26987* #	US-PATENT-CLASS-74-674	c 37	N79-20377* #	US-PATENT-CLASS-8-3	c 51	N77-27677* #
US-PATENT-CLASS-73-86	c 14	N69-39975* #	US-PATENT-CLASS-74-675	c 37	N74-27901* #	US-PATENT-CLASS-8-94 11	c 51	N77-27677* #
US-PATENT-CLASS-73-86	c 33	N71-21586* #	US-PATENT-CLASS-74-710	c 37	N74-27901* #	US-PATENT-CLASS-8-94 12	c 18	N71-15545* #
US-PATENT-CLASS-73-86	c 33	N73-27796* #	US-PATENT-CLASS-74-764	c 37	N79-20377* #	US-PATENT-CLASS-81-119	c 37	N79-14383* #
US-PATENT-CLASS-73-86	c 34	N74-15652* #	US-PATENT-CLASS-74-800	c 37	N78-17385* #	US-PATENT-CLASS-81-180B	c 37	N79-14383* #
US-PATENT-CLASS-73-88 5R	c 15	N72-17452* #	US-PATENT-CLASS-74-81	c 37	N78-16369* #	US-PATENT-CLASS-81-3R	c 15	N71-29133* #
US-PATENT-CLASS-73-88 5R	c 32	N73-26910* #	US-PATENT-CLASS-74-820	c 37	N75-13266* #	US-PATENT-CLASS-81-56	c 37	N76-20480* #
US-PATENT-CLASS-73-88 5R	c 52	N74-27864* #	US-PATENT-CLASS-74-83	c 37	N78-16369* #	US-PATENT-CLASS-81-57 31	c 37	N76-20480* #
US-PATENT-CLASS-73-88.5R	c 35	N76-14430* #	US-PATENT-CLASS-74-89 15	c 15	N71-26635* #	US-PATENT-CLASS-81-57 38	c 15	N73-30457* #
US-PATENT-CLASS-73-88 5SD	c 33	N76-19338* #	US-PATENT-CLASS-74-89 15	c 15	N72-21462* #	US-PATENT-CLASS-81-63 1	c 15	N71-17805* #
US-PATENT-CLASS-73-88 5	c 14	N70-34705* #	US-PATENT-CLASS-74-89 18	c 15	N71-23809* #	US-PATENT-CLASS-81-8 5R	c 37	N79-10419* #
US-PATENT-CLASS-73-88 5	c 14	N70-34799* #	US-PATENT-CLASS-74-89	c 37	N81-33483* #	US-PATENT-CLASS-81-90B	c 37	N79-14383* #
US-PATENT-CLASS-73-88 5	c 14	N71-17656* #	US-PATENT-CLASS-74-96	c 37	N77-22482* #	US-PATENT-CLASS-82-1 2	c 37	N81-14319* #
US-PATENT-CLASS-73-88 5	c 14	N71-21091* #	US-PATENT-CLASS-75-5B	c 17	N72-22530* #	US-PATENT-CLASS-82-1C	c 37	N81-14319* #
US-PATENT-CLASS-73-88 5	c 14	N71-23087* #	US-PATENT-CLASS-75-DIG.1	c 18	N72-25539* #	US-PATENT-CLASS-82-14	c 15	N71-22722* #
US-PATENT-CLASS-73-88 5	c 14	N71-24233* #	US-PATENT-CLASS-75-DIG 1	c 37	N75-26371* #	US-PATENT-CLASS-82-24R	c 14	N72-16283* #
US-PATENT-CLASS-73-88 5	c 09	N72-22200* #	US-PATENT-CLASS-75-05BB	c 15	N72-25448* #	US-PATENT-CLASS-82-36R	c 37	N81-14319* #
US-PATENT-CLASS-73-88.5	c 33	N75-31329* #	US-PATENT-CLASS-75-122.7	c 37	N77-19458* #	US-PATENT-CLASS-83-152	c 76	N80-18951* #
US-PATENT-CLASS-73-88.5	c 38	N76-28563* #	US-PATENT-CLASS-75-124	c 26	N78-18182* #	US-PATENT-CLASS-83-451	c 37	N77-14478* #
US-PATENT-CLASS-73-88A	c 32	N73-20740* #	US-PATENT-CLASS-75-124	c 26	N80-32484* #	US-PATENT-CLASS-83-452	c 39	N74-13131* #
US-PATENT-CLASS-73-88F	c 39	N78-15512* #	US-PATENT-CLASS-75-126D	c 26	N78-18182* #	US-PATENT-CLASS-83-467R	c 37	N77-14478* #
US-PATENT-CLASS-73-88R	c 35	N74-13129* #	US-PATENT-CLASS-75-126F	c 26	N78-18182* #	US-PATENT-CLASS-83-467	c 15	N71-22798* #
US-PATENT-CLASS-73-88R	c 35	N77-22449* #	US-PATENT-CLASS-75-128G	c 26	N78-18182* #	US-PATENT-CLASS-83-522	c 15	N72-27485* #
US-PATENT-CLASS-73-88R	c 39	N77-28511* #	US-PATENT-CLASS-75-128T	c 26	N78-18182* #	US-PATENT-CLASS-83-562	c 15	N72-27485* #
US-PATENT-CLASS-73-88	c 32	N71-17645* #	US-PATENT-CLASS-75-134D	c 76	N79-16678* #	US-PATENT-CLASS-83-563	c 15	N72-27485* #
US-PATENT-CLASS-73-90	c 32	N70-42003* #	US-PATENT-CLASS-75-135	c 18	N73-32437* #	US-PATENT-CLASS-83-588	c 15	N72-27485* #
US-PATENT-CLASS-73-90	c 32	N71-25360* #	US-PATENT-CLASS-75-135	c 24	N77-27187* #	US-PATENT-CLASS-83-602	c 39	N74-13131* #
US-PATENT-CLASS-73-90	c 14	N73-20476* #	US-PATENT-CLASS-75-135	c 26	N80-23419* #	US-PATENT-CLASS-83-820	c 37	N80-29703* #
US-PATENT-CLASS-73-91	c 14	N73-20476* #	US-PATENT-CLASS-75-138	c 26	N80-23419* #	US-PATENT-CLASS-83-870	c 76	N80-18951* #
US-PATENT-CLASS-73-91	c 32	N73-26910* #	US-PATENT-CLASS-75-139	c 24	N77-27187* #	US-PATENT-CLASS-83-8	c 15	N72-27485* #
US-PATENT-CLASS-73-91	c 09	N74-19520* #	US-PATENT-CLASS-75-142	c 17	N71-20743* #	US-PATENT-CLASS-83-917	c 39	N74-13131* #
US-PATENT-CLASS-73-91	c 39	N78-10493* #	US-PATENT-CLASS-75-170	c 17	N71-15644* #	US-PATENT-CLASS-85-1	c 15	N72-22488* #
US-PATENT-CLASS-73-94	c 14	N73-32323* #	US-PATENT-CLASS-75-170	c 17	N71-16025* #	US-PATENT-CLASS-85-33	c 15	N71-15922* #
US-PATENT-CLASS-73-95	c 15	N71-24834* #	US-PATENT-CLASS-75-170	c 17	N71-23248* #	US-PATENT-CLASS-85-33	c 15	N71-21489* #
US-PATENT-CLASS-73-95	c 14	N72-11364* #	US-PATENT-CLASS-75-170	c 17	N72-22535* #	US-PATENT-CLASS-85-3	c 15	N71-17653* #
US-PATENT-CLASS-73-95	c 35	N76-18400* #	US-PATENT-CLASS-75-170	c 37	N77-19458* #	US-PATENT-CLASS-85-5B	c 15	N72-11385* #
US-PATENT-CLASS-73-95	c 35	N77-22450* #	US-PATENT-CLASS-75-170	c 26	N77-20201* #	US-PATENT-CLASS-85-7	c 15	N71-23254* #
US-PATENT-CLASS-73-95	c 31	N79-11246* #	US-PATENT-CLASS-75-170	c 26	N77-32279* #	US-PATENT-CLASS-85-9R	c 27	N81-15104* #
US-PATENT-CLASS-73-97	c 14	N71-15600* #	US-PATENT-CLASS-75-170	c 26	N77-32280* #	US-PATENT-CLASS-86-1R	c 28	N77-10213* #
US-PATENT-CLASS-73-99	c 14	N71-10781* #	US-PATENT-CLASS-75-170	c 26	N78-18183* #	US-PATENT-CLASS-86-1R	c 20	N77-17143* #
US-PATENT-CLASS-73-9	c 14	N71-22995* #	US-PATENT-CLASS-75-171	c 17	N70-36616* #	US-PATENT-CLASS-86-1	c 28	N71-26779* #
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US-PATENT-3,016,863	c 15	N70-33323* #	US-PATENT-3,158,172	c 28	N70-37245* #	US-PATENT-3,208,215	c 28	N70-34162* #
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US-PATENT-3,024,659	c 12	N70-33305* #	US-PATENT-3,159,967	c 15	N70-34817* #	US-PATENT-3,208,694	c 02	N70-34160* #
US-PATENT-3,028,122	c 14	N70-34816* #	US-PATENT-3,160,825	c 31	N70-36410* #	US-PATENT-3,209,707	c 31	N70-34159* #
US-PATENT-3,028,126	c 14	N70-34820* #	US-PATENT-3,160,950	c 03	N70-36803* #	US-PATENT-3,209,360	c 09	N70-35219* #
US-PATENT-3,028,128	c 02	N70-33286* #	US-PATENT-3,162,012	c 28	N70-36802* #	US-PATENT-3,210,927	c 09	N70-35425* #
US-PATENT-3,035,333	c 21	N70-33279* #	US-PATENT-3,163,935	c 14	N70-35220* #	US-PATENT-3,211,169	c 28	N70-34175* #
US-PATENT-3,038,077	c 31	N70-33242* #	US-PATENT-3,164,222	c 15	N70-36409* #	US-PATENT-3,212,096	c 15	N70-35087* #
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US-PATENT-3,063,291	c 02	N70-33255* #	US-PATENT-3,170,286	c 14	N70-36807* #	US-PATENT-3,216,424	c 16	N71-28963* #
US-PATENT-3,064,928	c 15	N70-33264* #	US-PATENT-3,170,295	c 02	N70-36825* #	US-PATENT-3,217,629	c 08	N70-40125* #
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US-PATENT-3,336,754	c 28	N71-22983*	US-PATENT-3,364,813	c 09	N71-22999*	US-PATENT-3,393,347	c 10	N71-23543*
US-PATENT-3,337,004	c 14	N71-23092*	US-PATENT-3,365,657	c 10	N71-22961*	US-PATENT-3,393,380	c 10	N71-23544*
US-PATENT-3,337,279	c 05	N71-23080*	US-PATENT-3,365,665	c 14	N71-23037*	US-PATENT-3,393,384	c 09	N71-23573*
US-PATENT-3,337,315	c 18	N71-23088*	US-PATENT-3,365,897	c 33	N71-26892*	US-PATENT-3,394,286	c 14	N73-30391* #
US-PATENT-3,337,337	c 18	N71-22894*	US-PATENT-3,365,930	c 14	N71-22964*	US-PATENT-3,394,359	c 08	N71-28925*
US-PATENT-3,337,790	c 12	N71-20896*	US-PATENT-3,365,941	c 14	N71-22965*	US-PATENT-3,394,975	c 23	N71-30027*
US-PATENT-3,337,812	c 09	N71-23097*	US-PATENT-3,366,886	c 10	N71-22962*	US-PATENT-3,395,053	c 18	N71-23047*
US-PATENT-3,339,404	c 14	N71-22765*	US-PATENT-3,366,894	c 10	N71-23084*	US-PATENT-3,395,565	c 14	N73-30390* #
US-PATENT-3,339,863	c 14	N71-23040*	US-PATENT-3,367,114	c 28	N71-23081*	US-PATENT-3,396,057	c 26	N71-23043*
US-PATENT-3,340,099	c 03	N71-23006*	US-PATENT-3,367,121	c 15	N71-23025*	US-PATENT-3,396,184	c 06	N71-28808*
US-PATENT-3,340,395	c 14	N71-23041*	US-PATENT-3,367,182	c 15	N71-23085*	US-PATENT-3,396,303	c 09	N71-22987*
US-PATENT-3,340,397	c 11	N71-23042*	US-PATENT-3,367,224	c 33	N71-22798*	US-PATENT-3,396,584	c 14	N71-30026*
US-PATENT-3,340,430	c 09	N71-22796*	US-PATENT-3,367,271	c 15	N71-24042*	US-PATENT-3,396,719	c 52	N79-21750* #
US-PATENT-3,340,532	c 10	N71-21473*	US-PATENT-3,367,308	c 11	N71-22875*	US-PATENT-3,396,920	c 31	N71-29050*
US-PATENT-3,340,599	c 09	N71-23027*	US-PATENT-3,367,445	c 15	N71-23048*	US-PATENT-3,397,094	c 26	N71-29156*
US-PATENT-3,340,713	c 15	N71-22723*	US-PATENT-3,368,486	c 15	N71-22874*	US-PATENT-3,397,117	c 15	N71-23086*
US-PATENT-3,340,732	c 02	N71-23007*	US-PATENT-3,369,222	c 15	N71-22707*	US-PATENT-3,397,318	c 14	N71-22991*
US-PATENT-3,341,151	c 31	N71-23009*	US-PATENT-3,369,223	c 08	N71-22707*	US-PATENT-3,397,512	c 15	N71-23023*
US-PATENT-3,341,169	c 15	N71-23024*	US-PATENT-3,369,564	c 08	N71-22710*	US-PATENT-3,397,537	c 20	N79-21125* #
US-PATENT-3,341,708	c 16	N71-22895*	US-PATENT-3,370,039	c 15	N71-23051*	US-PATENT-3,397,932	c 15	N71-22982*
US-PATENT-3,341,778	c 07	N71-23098*	US-PATENT-3,372,588	c 06	N71-28807*	US-PATENT-3,399,299	c 10	N71-23662*
US-PATENT-3,341,977	c 15	N71-22705*	US-PATENT-3,373,016	c 33	N71-29051*	US-PATENT-3,399,574	c 32	N71-24285*
US-PATENT-3,342,055	c 15	N71-22797*	US-PATENT-3,373,069	c 26	N75-27127* #	US-PATENT-3,402,265	c 09	N73-28084* #
US-PATENT-3,342,066	c 11	N71-23030*	US-PATENT-3,373,430	c 15	N71-23052*	US-PATENT-3,404,289	c 09	N71-23545*
US-PATENT-3,342,653	c 15	N71-22713*	US-PATENT-3,374,831	c 08	N71-22749*	US-PATENT-3,404,348	c 32	N74-22098* #
US-PATENT-3,343,180	c 05	N71-23159*	US-PATENT-3,374,840	c 09	N71-22888*	US-PATENT-3,405,406	c 05	N71-23161*
US-PATENT-3,343,189	c 05	N71-22748*	US-PATENT-3,375,451	c 07	N71-22750*	US-PATENT-3,405,887	c 31	N71-24315*
US-PATENT-3,344,340	c 09	N71-21449*	US-PATENT-3,375,479	c 15	N71-22722*	US-PATENT-3,406,336	c 10	N71-24863*
US-PATENT-3,344,425	c 10	N71-21483*	US-PATENT-3,375,712	c 15	N71-23050*	US-PATENT-3,406,742	c 33	N71-24276*
US-PATENT-3,345,820	c 28	N71-21822*	US-PATENT-3,375,885	c 08	N71-22897*	US-PATENT-3,407,304	c 14	N71-23240*
US-PATENT-3,345,822	c 27	N71-21819*	US-PATENT-3,376,708	c 09	N71-23015*	US-PATENT-3,408,816	c 28	N71-24736*
US-PATENT-3,345,840	c 15	N71-21536*	US-PATENT-3,377,200	c 33	N71-22890*	US-PATENT-3,408,870	c 14	N71-23227*
US-PATENT-3,345,866	c 11	N71-21481*	US-PATENT-3,377,845	c 10	N71-22986*	US-PATENT-3,409,247	c 33	N71-28903*
US-PATENT-3,346,419	c 03	N71-20895*	US-PATENT-3,378,657	c 15	N71-23049*	US-PATENT-3,409,252	c 15	N71-23255*
US-PATENT-3,346,442	c 18	N71-21651*	US-PATENT-3,378,892	c 35	N75-29382* #	US-PATENT-3,409,554	c 26	N71-23292*
US-PATENT-3,346,515	c 06	N71-20905*	US-PATENT-3,379,052	c 15	N73-32362* #	US-PATENT-3,409,730	c 33	N71-24145*
US-PATENT-3,346,724	c 15	N71-21179*	US-PATENT-3,379,064	c 14	N71-22995*	US-PATENT-3,411,356	c 14	N71-23226*
US-PATENT-3,346,806	c 14	N71-21090*	US-PATENT-3,379,330	c 14	N71-23039*	US-PATENT-3,411,900	c 26	N75-27126* #
US-PATENT-3,346,929	c 15	N71-21076*	US-PATENT-3,379,885	c 14	N71-22992*	US-PATENT-3,412,559	c 28	N71-23293*
US-PATENT-3,347,046	c 33	N71-21507*	US-PATENT-3,379,974	c 15	N71-22997*	US-PATENT-3,412,598	c 14	N71-23225*
US-PATENT-3,347,309	c 33	N71-29046*	US-PATENT-3,380,049	c 33	N79-33392* #	US-PATENT-3,412,729	c 04	N71-23185*
US-PATENT-3,347,465	c 18	N71-21068*	US-PATENT-3,381,339	c 05	N71-23096*	US-PATENT-3,412,961	c 32	N71-23971*
US-PATENT-3,347,466	c 28	N71-21493*	US-PATENT-3,381,517	c 15	N71-22994*	US-PATENT-3,413,115	c 17	N71-23365*
US-PATENT-3,347,531	c 15	N71-21177*	US-PATENT-3,381,569	c 14	N73-32321* #	US-PATENT-3,413,393	c 17	N71-29137*
US-PATENT-3,347,665	c 17	N71-20743*	US-PATENT-3,381,778	c 14	N71-23093*	US-PATENT-3,413,510	c 09	N71-23190*
US-PATENT-3,348,048	c 14	N71-21088*	US-PATENT-3,382,082	c 23	N71-22881*	US-PATENT-3,413,536	c 03	N71-24605*
US-PATENT-3,348,053	c 10	N71-20782*	US-PATENT-3,382,105	c 09	N71-22985*	US-PATENT-3,414,012	c 09	N71-23191*
US-PATENT-3,348,152	c 10	N71-20841*	US-PATENT-3,382,171	c 14	N71-22980*	US-PATENT-3,414,358	c 14	N71-23175*
US-PATENT-3,348,218	c 10	N71-29135*	US-PATENT-3,383,461	c 07	N71-23001*	US-PATENT-3,415,032	c 15	N71-23256*
US-PATENT-3,349,814	c 33	N71-20834*	US-PATENT-3,383,523	c 10	N71-23099*	US-PATENT-3,415,069	c 15	N71-24044*
US-PATENT-3,350,033	c 14	N71-21082*	US-PATENT-3,383,922	c 06	N71-22975*	US-PATENT-3,415,116	c 14	N71-23790*
US-PATENT-3,350,034	c 31	N71-21064*	US-PATENT-3,384,016	c 09	N71-22988*	US-PATENT-3,415,126	c 21	N71-23289*
US-PATENT-3,350,643	c 07	N71-20791*	US-PATENT-3,384,075	c 15	N71-22878*	US-PATENT-3,415,156	c 15	N71-24043*
US-PATENT-3,350,671	c 09	N71-20842*	US-PATENT-3,384,111	c 21	N71-22880*	US-PATENT-3,415,643	c 17	N71-23248*
US-PATENT-3,350,926	c 14	N71-21091*	US-PATENT-3,384,324	c 15	N71-22877*	US-PATENT-3,416,106	c 09	N71-24808*
US-PATENT-3,352,157	c 14	N71-21072*	US-PATENT-3,384,895	c 18	N71-22998*	US-PATENT-3,416,274	c 31	N71-24035*
US-PATENT-3,352,192	c 15	N71-21489*	US-PATENT-3,385,036	c 03	N71-29044*	US-PATENT-3,416,839	c 18	N71-24183*
US-PATENT-3,352,774	c 37	N80-14395* #	US-PATENT-3,385,337	c 03	N71-22974*	US-PATENT-3,416,975	c 17	N71-23828*
US-PATENT-3,353,359	c 28	N71-20942*	US-PATENT-3,386,686	c 14	N71-22989*	US-PATENT-3,416,988	c 15	N71-24164*
US-PATENT-3,354,098	c 06	N71-20717*	US-PATENT-3,387,149	c 07	N71-23026*	US-PATENT-3,417,247	c 14	N71-23797*
US-PATENT-3,354,320	c 23	N71-21821*	US-PATENT-3,387,218	c 10	N71-23029*	US-PATENT-3,417,266	c 09	N71-23270*
US-PATENT-3,354,462	c 14	N71-21006*	US-PATENT-3,388,258	c 14	N71-23036*	US-PATENT-3,417,298	c 10	N71-23271*
US-PATENT-3,355,861	c 18	N71-20742*	US-PATENT-3,388,387	c 14	N71-22752*	US-PATENT-3,417,316	c 14	N71-23174*
US-PATENT-3,355,948	c 14	N71-21007*	US-PATENT-3,389,017	c 31	N71-23008*	US-PATENT-3,417,321	c 09	N71-23316*
US-PATENT-3,356,320	c 05	N71-20718*	US-PATENT-3,389,260	c 05	N71-22896*	US-PATENT-3,417,332	c 07	N71-23405*
US-PATENT-3,356,549	c 15	N71-21404*	US-PATENT-3,389,346	c 15	N71-22706*	US-PATENT-3,417,399	c 30	N71-23723*
US-PATENT-3,356,885	c 25	N71-20747*	US-PATENT-3,390,027	c 33	N71-22792*	US-PATENT-3,417,999	c 07	N71-28809*
US-PATENT-3,356,917	c 33	N79-21265* #	US-PATENT-3,390,070	c 09	N71-23021*	US-PATENT-3,419,329	c 14	N71-23268*
US-PATENT-3,357,024	c 12	N71-20815*	US-PATENT-3,390,282	c 07	N71-22984*	US-PATENT-3,419,363	c 18	N71-23710*
US-PATENT-3,357,093	c 15	N71-21078*	US-PATENT-3,390,378	c 15	N71-22721*	US-PATENT-3,419,384	c 17	N73-28573* #
US-PATENT-3,357,237	c 33	N71-21586*	US-PATENT-3,390,528	c 15	N71-22799*	US-PATENT-3,419,433	c 03	N71-23187*
US-PATENT-3,357,862	c 03	N71-20904*	US-PATENT-3,391,080	c 31	N71-22968*	US-PATENT-3,419,531	c 27	N79-21191* #
US-PATENT-3,358,264	c 09	N71-20851*	US-PATENT-3,392,403	c 31	N71-22969*	US-PATENT-3,419,537	c 06	N71-23500*
US-PATENT-3,359,046	c 15	N71-20739*	US-PATENT-3,392,586	c 14	N71-22993*	US-PATENT-3,419,827	c 09	N71-23548*
US-PATENT-3,359,132	c 09	N71-20705*	US-PATENT-3,392,665	c 37	N78-17386* #	US-PATENT-3,419,964	c 14	N69-21363* #
US-PATENT-3,359,409	c 07	N71-21476*	US-PATENT-3,392,836	c 14	N71-22996*	US-PATENT-3,419,992	c 14	N71-23401*
US-PATENT-3,359,435	c 15	N71-21311*	US-PATENT-3,392,866	c 10	N71-23033*	US-PATENT-3,420,069	c 15	N69-21465* #
US-PATENT-3,359,555	c 09	N71-20864*	US-PATENT-3,392,885	c 14	N71-23087*	US-PATENT-3,420,223	c 05	N69-21925* #
US-PATENT-3,359,568	c 54	N78-17680* #	US-PATENT-3,392,886	c 15	N71-23022*	US-PATENT-3,420,225	c 05	N69-21473* #
US-PATENT-3,359,819	c 15	N71-21744*	US-PATENT-3,392,887	c 14	N71-23265*	US-PATENT-3,420,253	c 12	N69-21466* #
US-PATENT-3,359,855	c 23	N71-21882*	US-PATENT-3,393,010	c 10	N71-28859*	US-PATENT-3,420,338	c 15	N71-26243* #
US-PATENT-3,360,798	c 09	N71-20658*	US-PATENT-3,393,017	c 15	N71-28936*	US-PATENT-3,420,471	c 05	N69-21380* #
US-PATENT-3,360,864	c 14	N71-24693*	US-PATENT-3,393,028	c 03	N71-23336*	US-PATENT-3,420,704	c 15	N69-21460* #
US-PATENT-3,360,972	c 15	N71-24833*	US-PATENT-3,393,059	c 26	N71-23654*	US-PATENT-3,420,945	c 09	N69-21542* #
US-PATENT-3,360,980	c 14	N71-20741*	US-PATENT-3,393,330	c 26	N75-29236* #	US-PATENT-3,420,978	c 15	N69-21471* #
US-PATENT-3,360,988	c 09	N71-20816*	US-PATENT-3,393,332	c 09	N71-23311*	US-PATENT-3,421,004	c 14	N71-19568*
US-PATENT-3,361,045	c 15	N71-21060*	US-PATENT-3,393,332	c 08	N71-23295*	US-PATENT-3,421,053	c 15	N69-21472* #
US-PATENT-3,361,067	c 26	N71-21824*	US-PATENT-3,393,332	c 20	N79-21124* #	US-PATENT-3,421,056	c 14	N69-23191* #
US-PATENT-3,361,400	c 15	N71-20813*	US-PATENT-3,393,332	c 15	N71-24046*	US-PATENT-3,421,105	c 09	N69-21543* #
US-PATENT-3,361,666	c 15	N71-21403*	US-PATENT-3,393,332	c 23	N71-23976*	US-PATENT-3,421,134	c 09	N69-21470* #
US-PATENT-3,361,985	c 10	N71-20852*	US-PATENT-3,393,332	c 14	N71-24232*	US-PATENT-3,421,331	c 15	N69-23190* #
US-PATENT-3,364,311	c 07	N71-20814*	US-PATENT-3,393,332	c 18	N71-23658*	US-PATENT-3,421,363	c 11	N69-21542* #
US-PATENT-3,364,366	c 09	N71-28926*	US-PATENT-3,393,332	c 15	N71-23816*	US-PATENT-3,421,506	c 05	N69-23192* #
US-PATENT-3,364,578	c 14	N71-21079*	US-PATENT-3,393,332	c 01	N71-23497*	US-PATENT-3,421,541	c 15	N69-21924* #
US-PATENT-3,364,631	c 32	N71-21045*	US-PATENT-3,393,332	c 06	N71-23499*	US-PATENT-3,421,549	c 03	N69-21469* #
US-PATENT-3,364,777	c 15	N71-20740*	US-PATENT-3,393,332	c 22	N71-23599*	US-PATENT-3,421,591	c 14	N69-21923* #
				c 09	N71-23443*			



US-PATENT-3,421,700	c 15	N69-23185* #	US-PATENT-3,443,128	c 03	N69-39890* #	US-PATENT-3,466,243	c 15	N71-23810* #
US-PATENT-3,421,768	c 15	N69-21362* #	US-PATENT-3,443,208	c 14	N71-20428* #	US-PATENT-3,466,418	c 15	N71-18613* #
US-PATENT-3,421,864	c 17	N71-23046* #	US-PATENT-3,443,384	c 28	N71-24321* #	US-PATENT-3,466,424	c 15	N71-20395* #
US-PATENT-3,421,948	c 03	N69-21337* #	US-PATENT-3,443,390	c 11	N71-24964* #	US-PATENT-3,466,459	c 09	N71-26000* #
US-PATENT-3,422,213	c 03	N69-21539* #	US-PATENT-3,443,412	c 15	N71-23811* #	US-PATENT-3,466,484	c 14	N71-18482* #
US-PATENT-3,422,278	c 09	N69-21468* #	US-PATENT-3,443,416	c 06	N69-39936* #	US-PATENT-3,466,560	c 09	N71-19468* #
US-PATENT-3,422,291	c 25	N69-21929* #	US-PATENT-3,443,472	c 15	N71-23254* #	US-PATENT-3,466,570	c 10	N71-25950* #
US-PATENT-3,422,324	c 14	N69-21541* #	US-PATENT-3,443,583	c 14	N71-18625* #	US-PATENT-3,467,837	c 05	N71-23317* #
US-PATENT-3,422,352	c 14	N71-19431* #	US-PATENT-3,443,584	c 32	N71-16106* #	US-PATENT-3,468,303	c 09	N71-26002* #
US-PATENT-3,422,354	c 09	N69-21926* #	US-PATENT-3,443,732	c 15	N71-15607* #	US-PATENT-3,468,548	c 15	N71-26294* #
US-PATENT-3,422,390	c 09	N69-21927* #	US-PATENT-3,443,773	c 31	N71-23912* #	US-PATENT-3,468,609	c 16	N71-24170* #
US-PATENT-3,422,403	c 08	N69-21928* #	US-PATENT-3,444,051	c 05	N71-11207* #	US-PATENT-3,468,727	c 14	N71-25892* #
US-PATENT-3,422,440	c 09	N69-21467* #	US-PATENT-3,444,127	c 06	N71-11237* #	US-PATENT-3,468,765	c 17	N71-25903* #
US-PATENT-3,423,179	c 15	N69-21922* #	US-PATENT-3,444,375	c 14	N71-15599* #	US-PATENT-3,469,068	c 15	N71-23815* #
US-PATENT-3,423,290	c 06	N71-17705* #	US-PATENT-3,444,380	c 07	N69-39980* #	US-PATENT-3,469,069	c 15	N71-23798* #
US-PATENT-3,423,579	c 09	N71-19480* #	US-PATENT-3,446,075	c 14	N73-30394* #	US-PATENT-3,469,087	c 16	N71-25914* #
US-PATENT-3,423,608	c 09	N69-21313* #	US-PATENT-3,446,387	c 15	N69-39935* #	US-PATENT-3,469,143	c 33	N75-29318* #
US-PATENT-3,423,627	c 33	N78-17293* #	US-PATENT-3,446,558	c 16	N71-24074* #	US-PATENT-3,469,289	c 15	N71-25975* #
US-PATENT-3,424,966	c 10	N71-20448* #	US-PATENT-3,446,642	c 18	N69-39895* #	US-PATENT-3,469,375	c 14	N71-18483* #
US-PATENT-3,425,131	c 15	N71-19489* #	US-PATENT-3,446,676	c 03	N71-11050* #	US-PATENT-3,469,436	c 15	N71-23817* #
US-PATENT-3,425,268	c 14	N69-39975* #	US-PATENT-3,446,960	c 14	N69-39982* #	US-PATENT-3,469,437	c 14	N71-24234* #
US-PATENT-3,425,272	c 14	N71-20439* #	US-PATENT-3,446,992	c 09	N69-39987* #	US-PATENT-3,469,734	c 11	N71-17600* #
US-PATENT-3,425,276	c 14	N69-24257* #	US-PATENT-3,446,997	c 03	N69-39988* #	US-PATENT-3,470,043	c 15	N71-24047* #
US-PATENT-3,425,486	c 05	N71-24147* #	US-PATENT-3,446,998	c 09	N69-39929* #	US-PATENT-3,470,304	c 14	N71-23267* #
US-PATENT-3,425,487	c 05	N71-19439* #	US-PATENT-3,447,003	c 09	N71-20446* #	US-PATENT-3,470,313	c 07	N71-26579* #
US-PATENT-3,425,885	c 15	N69-24322* #	US-PATENT-3,447,015	c 06	N69-39889* #	US-PATENT-3,470,318	c 07	N71-24612* #
US-PATENT-3,426,219	c 09	N69-24317* #	US-PATENT-3,447,071	c 25	N69-39884* #	US-PATENT-3,470,342	c 09	N71-19610* #
US-PATENT-3,426,230	c 15	N69-24319* #	US-PATENT-3,447,154	c 21	N71-11766* #	US-PATENT-3,470,443	c 03	N71-23239* #
US-PATENT-3,426,263	c 03	N71-19438* #	US-PATENT-3,447,155	c 09	N71-18598* #	US-PATENT-3,470,446	c 09	N71-23188* #
US-PATENT-3,426,272	c 14	N69-39785* #	US-PATENT-3,447,233	c 15	N69-39786* #	US-PATENT-3,470,466	c 14	N71-23699* #
US-PATENT-3,426,746	c 05	N71-26293* #	US-PATENT-3,447,774	c 15	N71-19485* #	US-PATENT-3,470,475	c 10	N71-19467* #
US-PATENT-3,426,791	c 15	N71-19569* #	US-PATENT-3,447,850	c 09	N71-18600* #	US-PATENT-3,470,489	c 09	N71-23598* #
US-PATENT-3,427,047	c 15	N69-27490* #	US-PATENT-3,448,273	c 07	N69-39736* #	US-PATENT-3,470,495	c 10	N71-23669* #
US-PATENT-3,427,089	c 23	N69-24332* #	US-PATENT-3,448,290	c 10	N71-23315* #	US-PATENT-3,470,496	c 09	N71-19470* #
US-PATENT-3,427,093	c 09	N71-19479* #	US-PATENT-3,448,341	c 09	N71-12526* #	US-PATENT-3,471,856	c 30	N71-16090* #
US-PATENT-3,427,097	c 11	N69-24321* #	US-PATENT-3,448,346	c 15	N71-18701* #	US-PATENT-3,471,858	c 07	N71-12391* #
US-PATENT-3,427,205	c 15	N69-24320* #	US-PATENT-3,450,842	c 07	N69-39978* #	US-PATENT-3,472,019	c 10	N71-26326* #
US-PATENT-3,427,435	c 17	N69-25147* #	US-PATENT-3,450,878	c 14	N71-20430* #	US-PATENT-3,472,059	c 14	N71-23755* #
US-PATENT-3,427,454	c 05	N71-19440* #	US-PATENT-3,450,946	c 09	N69-39987* #	US-PATENT-3,472,060	c 14	N71-26136* #
US-PATENT-3,427,525	c 03	N69-21330* #	US-PATENT-3,452,103	c 06	N73-30101* #	US-PATENT-3,472,069	c 15	N71-20441* #
US-PATENT-3,428,761	c 09	N69-24329* #	US-PATENT-3,452,423	c 26	N71-16037* #	US-PATENT-3,472,080	c 10	N71-26339* #
US-PATENT-3,428,812	c 14	N69-27485* #	US-PATENT-3,452,872	c 14	N69-39896* #	US-PATENT-3,472,086	c 15	N71-23809* #
US-PATENT-3,428,847	c 15	N69-24266* #	US-PATENT-3,453,172	c 15	N69-39735* #	US-PATENT-3,472,140	c 14	N71-26474* #
US-PATENT-3,428,910	c 09	N69-24330* #	US-PATENT-3,453,462	c 03	N69-39983* #	US-PATENT-3,472,202	c 17	N71-24911* #
US-PATENT-3,428,919	c 07	N69-24334* #	US-PATENT-3,453,546	c 05	N71-12342* #	US-PATENT-3,472,372	c 15	N71-20440* #
US-PATENT-3,428,923	c 07	N69-27462* #	US-PATENT-3,453,878	c 09	N79-21083* #	US-PATENT-3,472,470	c 02	N71-20570* #
US-PATENT-3,429,058	c 12	N69-39988* #	US-PATENT-3,454,410	c 18	N69-39979* #	US-PATENT-3,472,577	c 23	N71-24857* #
US-PATENT-3,429,177	c 06	N69-39733* #	US-PATENT-3,454,766	c 35	N75-27329* #	US-PATENT-3,472,625	c 06	N71-23527* #
US-PATENT-3,429,177	c 15	N69-27502* #	US-PATENT-3,455,121	c 14	N71-20427* #	US-PATENT-3,472,629	c 14	N71-20442* #
US-PATENT-3,429,756	c 76	N79-21910* #	US-PATENT-3,455,171	c 23	N71-16098* #	US-PATENT-3,472,698	c 03	N71-23449* #
US-PATENT-3,430,063	c 09	N69-27500* #	US-PATENT-3,456,112	c 14	N69-39937* #	US-PATENT-3,472,709	c 18	N71-26153* #
US-PATENT-3,430,115	c 09	N69-24318* #	US-PATENT-3,456,193	c 08	N71-19763* #	US-PATENT-3,472,742	c 17	N71-24830* #
US-PATENT-3,430,131	c 24	N71-20518* #	US-PATENT-3,456,201	c 09	N69-39885* #	US-PATENT-3,472,998	c 16	N71-20400* #
US-PATENT-3,430,182	c 14	N69-27431* #	US-PATENT-3,458,104	c 15	N71-20393* #	US-PATENT-3,473,050	c 09	N71-20447* #
US-PATENT-3,430,227	c 08	N71-19687* #	US-PATENT-3,458,313	c 14	N71-17574* #	US-PATENT-3,473,116	c 25	N71-20563* #
US-PATENT-3,430,237	c 07	N69-39974* #	US-PATENT-3,458,651	c 09	N71-19449* #	US-PATENT-3,473,165	c 05	N71-26333* #
US-PATENT-3,430,460	c 15	N69-27505* #	US-PATENT-3,458,702	c 14	N71-18699* #	US-PATENT-3,473,216	c 15	N71-20443* #
US-PATENT-3,430,902	c 14	N69-27466* #	US-PATENT-3,458,726	c 10	N69-39888* #	US-PATENT-3,473,379	c 12	N71-26387* #
US-PATENT-3,430,909	c 11	N69-27466* #	US-PATENT-3,458,833	c 10	N71-19418* #	US-PATENT-3,473,758	c 03	N71-20273* #
US-PATENT-3,430,937	c 15	N69-27483* #	US-PATENT-3,458,851	c 09	N69-39734* #	US-PATENT-3,474,192	c 07	N71-26102* #
US-PATENT-3,430,942	c 15	N69-27504* #	US-PATENT-3,459,391	c 03	N71-11058* #	US-PATENT-3,474,220	c 15	N71-19486* #
US-PATENT-3,431,149	c 14	N69-27459* #	US-PATENT-3,460,378	c 14	N71-24233* #	US-PATENT-3,474,328	c 14	N71-26266* #
US-PATENT-3,431,397	c 15	N69-27871* #	US-PATENT-3,460,379	c 15	N71-24834* #	US-PATENT-3,474,357	c 09	N71-20445* #
US-PATENT-3,431,460	c 09	N71-23189* #	US-PATENT-3,460,381	c 14	N71-23725* #	US-PATENT-3,474,413	c 10	N71-26103* #
US-PATENT-3,431,559	c 09	N69-24333* #	US-PATENT-3,460,397	c 15	N71-24045* #	US-PATENT-3,474,441	c 08	N71-19544* #
US-PATENT-3,432,730	c 09	N69-27422* #	US-PATENT-3,460,759	c 28	N71-23968* #	US-PATENT-3,475,384	c 06	N73-30103* #
US-PATENT-3,433,015	c 28	N71-20330* #	US-PATENT-3,460,781	c 14	N71-23698* #	US-PATENT-3,475,442	c 26	N75-27125* #
US-PATENT-3,433,079	c 14	N69-27503* #	US-PATENT-3,460,995	c 03	N71-20407* #	US-PATENT-3,475,675	c 33	N78-17295* #
US-PATENT-3,433,662	c 14	N71-20461* #	US-PATENT-3,461,290	c 14	N71-26475* #	US-PATENT-3,476,514	c 37	N77-22479* #
US-PATENT-3,433,818	c 06	N71-23230* #	US-PATENT-3,461,393	c 10	N71-26415* #	US-PATENT-3,480,789	c 10	N71-26626* #
US-PATENT-3,433,909	c 10	N71-23663* #	US-PATENT-3,461,437	c 10	N71-26434* #	US-PATENT-3,481,638	c 15	N71-26312* #
US-PATENT-3,433,953	c 14	N69-27484* #	US-PATENT-3,461,700	c 15	N71-26346* #	US-PATENT-3,481,802	c 31	N79-21226* #
US-PATENT-3,433,960	c 16	N69-27491* #	US-PATENT-3,461,721	c 12	N71-20436* #	US-PATENT-3,481,887	c 18	N71-26155* #
US-PATENT-3,433,961	c 14	N69-27432* #	US-PATENT-3,461,855	c 05	N71-20268* #	US-PATENT-3,482,179	c 10	N71-26331* #
US-PATENT-3,434,033	c 09	N69-39984* #	US-PATENT-3,463,001	c 14	N71-20429* #	US-PATENT-3,483,535	c 10	N71-26418* #
US-PATENT-3,434,037	c 10	N71-26414* #	US-PATENT-3,463,563	c 15	N71-23812* #	US-PATENT-3,484,712	c 10	N71-26374* #
US-PATENT-3,434,050	c 09	N71-20569* #	US-PATENT-3,463,673	c 03	N71-20491* #	US-PATENT-3,485,290	c 20	N79-21123* #
US-PATENT-3,434,064	c 09	N69-39986* #	US-PATENT-3,463,679	c 17	N71-24142* #	US-PATENT-3,486,123	c 16	N71-24831* #
US-PATENT-3,434,855	c 18	N71-24184* #	US-PATENT-3,463,761	c 06	N73-30099* #	US-PATENT-3,487,216	c 14	N71-24809* #
US-PATENT-3,434,885	c 03	N71-20492* #	US-PATENT-3,463,762	c 06	N73-30100* #	US-PATENT-3,487,281	c 15	N71-24695* #
US-PATENT-3,435,246	c 14	N69-24331* #	US-PATENT-3,463,939	c 10	N71-19471* #	US-PATENT-3,487,288	c 10	N71-25139* #
US-PATENT-3,437,394	c 14	N69-27461* #	US-PATENT-3,464,012	c 14	N71-26244* #	US-PATENT-3,487,680	c 15	N71-17696* #
US-PATENT-3,437,527	c 03	N69-24267* #	US-PATENT-3,464,016	c 10	N71-19472* #	US-PATENT-3,487,765	c 54	N78-17679* #
US-PATENT-3,437,560	c 04	N69-27487* #	US-PATENT-3,464,018	c 09	N71-23525* #	US-PATENT-3,488,103	c 14	N71-15604* #
US-PATENT-3,437,818	c 03	N71-23354* #	US-PATENT-3,464,049	c 32	N71-15974* #	US-PATENT-3,488,123	c 14	N71-17627* #
US-PATENT-3,437,832	c 09	N69-27463* #	US-PATENT-3,464,051	c 15	N71-17685* #	US-PATENT-3,488,414	c 15	N71-17803* #
US-PATENT-3,437,874	c 08	N71-20571* #	US-PATENT-3,465,482	c 31	N71-16080* #	US-PATENT-3,488,461	c 09	N71-12518* #
US-PATENT-3,437,903	c 03	N69-25146* #	US-PATENT-3,465,567	c 15	N71-18579* #	US-PATENT-3,488,504	c 21	N71-15842* #
US-PATENT-3,437,919	c 14	N69-27423* #	US-PATENT-3,465,569	c 14	N71-17659* #	US-PATENT-3,488,771	c 54	N78-17678* #
US-PATENT-3,437,935	c 09	N69-24324* #	US-PATENT-3,465,584	c 14	N71-23726* #	US-PATENT-3,490,074	c 54	N78-17677* #
US-PATENT-3,437,959	c 07	N69-24323* #	US-PATENT-3,465,638	c 11	N71-18578* #	US-PATENT-3,490,130	c 05	N71-12345* #
US-PATENT-3,438,044	c 17	N69-27460* #	US-PATENT-3,465,986	c 31	N71-20396* #	US-PATENT-3,490,205	c 14	N71-17588* #
US-PATENT-3,438,263	c 04	N71-20435* #	US-PATENT-3,466,052	c 15	N71-19570* #	US-PATENT-3,490,235	c 28	N71-14044* #



US-PATENT-3,490,718	c 33	N71-14035* #	US-PATENT-3,508,999	c 15	N71-17687*	US-PATENT-3,534,406	c 05	N71-11195* #
US-PATENT-3,490,719	c 21	N71-14159* #	US-PATENT-3,509,034	c 14	N71-17575*	US-PATENT-3,534,407	c 05	N71-11194* #
US-PATENT-3,490,721	c 02	N71-11039* #	US-PATENT-3,509,386	c 03	N71-11055* #	US-PATENT-3,534,479	c 14	N71-17657*
US-PATENT-3,490,939	c 33	N71-14032* #	US-PATENT-3,509,419	c 24	N71-16213*	US-PATENT-3,534,480	c 14	N71-17658*
US-PATENT-3,490,965	c 09	N71-12513* #	US-PATENT-3,509,469	c 23	N71-16099*	US-PATENT-3,534,485	c 11	N71-18773*
US-PATENT-3,491,202	c 07	N71-12392*	US-PATENT-3,509,475	c 09	N71-24596*	US-PATENT-3,534,555	c 12	N71-17631*
US-PATENT-3,491,255	c 09	N71-12514* #	US-PATENT-3,509,491	c 09	N71-18721*	US-PATENT-3,534,585	c 10	N71-13545* #
US-PATENT-3,491,335	c 14	N71-15620* #	US-PATENT-3,509,551	c 08	N71-18694*	US-PATENT-3,534,592	c 14	N71-17701*
US-PATENT-3,491,857	c 14	N71-17626*	US-PATENT-3,509,558	c 08	N71-18751*	US-PATENT-3,534,596	c 14	N71-17656*
US-PATENT-3,492,176	c 27	N71-14090* #	US-PATENT-3,509,570	c 08	N71-19435*	US-PATENT-3,534,597	c 14	N71-17586*
US-PATENT-3,492,672	c 05	N71-12344* #	US-PATENT-3,509,578	c 09	N71-18720*	US-PATENT-3,534,650	c 31	N71-15643*
US-PATENT-3,492,739	c 15	N71-15571*	US-PATENT-3,511,680	c 07	N71-19493*	US-PATENT-3,534,686	c 15	N71-17653*
US-PATENT-3,492,858	c 35	N78-17358* #	US-PATENT-3,512,009	c 31	N79-21227* #	US-PATENT-3,534,727	c 31	N71-15687*
US-PATENT-3,492,862	c 14	N71-15600* #	US-PATENT-3,514,785	c 08	N71-18751*	US-PATENT-3,534,765	c 05	N71-11189* #
US-PATENT-3,492,947	c 28	N71-14058* #	US-PATENT-3,516,091	c 54	N78-18761* #	US-PATENT-3,534,826	c 12	N71-17661*
US-PATENT-3,493,003	c 15	N71-15609* #	US-PATENT-3,516,179	c 05	N71-24623*	US-PATENT-3,534,836	c 31	N71-15689*
US-PATENT-3,493,004	c 12	N71-17579*	US-PATENT-3,516,185	c 11	N71-19494*	US-PATENT-3,534,909	c 15	N71-17805*
US-PATENT-3,493,012	c 15	N71-15608* #	US-PATENT-3,516,284	c 12	N71-18603*	US-PATENT-3,534,924	c 15	N71-17654*
US-PATENT-3,493,027	c 31	N71-18611*	US-PATENT-3,516,404	c 12	N71-17573*	US-PATENT-3,534,925	c 31	N71-15674*
US-PATENT-3,493,153	c 05	N71-12351* #	US-PATENT-3,516,711	c 05	N71-17599*	US-PATENT-3,534,926	c 31	N71-15676*
US-PATENT-3,493,155	c 26	N71-14354* #	US-PATENT-3,516,879	c 05	N71-12341* #	US-PATENT-3,534,930	c 15	N71-19214*
US-PATENT-3,493,194	c 21	N71-14132* #	US-PATENT-3,516,964	c 23	N71-16212*	US-PATENT-3,535,012	c 02	N71-13422* #
US-PATENT-3,493,197	c 02	N71-11043* #	US-PATENT-3,516,970	c 06	N71-11240* #	US-PATENT-3,535,013	c 16	N71-15567*
US-PATENT-3,493,291	c 14	N71-15622* #	US-PATENT-3,516,971	c 06	N71-11239* #	US-PATENT-3,535,014	c 16	N71-15551*
US-PATENT-3,493,294	c 14	N71-15605* #	US-PATENT-3,517,109	c 06	N71-24740*	US-PATENT-3,535,041	c 16	N71-15565*
US-PATENT-3,493,401	c 18	N71-14014* #	US-PATENT-3,517,171	c 07	N71-19436*	US-PATENT-3,535,100	c 14	N71-17662*
US-PATENT-3,493,415	c 15	N71-15610* #	US-PATENT-3,517,221	c 33	N71-16278*	US-PATENT-3,535,130	c 14	N71-17655*
US-PATENT-3,493,437	c 03	N71-11056* #	US-PATENT-3,517,268	c 08	N71-24633*	US-PATENT-3,535,165	c 17	N71-15468*
US-PATENT-3,493,522	c 06	N71-11243* #	US-PATENT-3,517,302	c 10	N71-19547*	US-PATENT-3,535,179	c 18	N71-15469*
US-PATENT-3,493,524	c 06	N71-11242* #	US-PATENT-3,517,318	c 10	N71-19469*	US-PATENT-3,535,352	c 33	N71-15568*
US-PATENT-3,493,665	c 14	N71-15621* #	US-PATENT-3,517,328	c 25	N71-16073*	US-PATENT-3,535,446	c 15	N71-17651*
US-PATENT-3,493,677	c 07	N71-11300* #	US-PATENT-3,518,232	c 08	N71-19432*	US-PATENT-3,535,451	c 18	N71-15688*
US-PATENT-3,493,711	c 15	N71-14932* #	US-PATENT-3,518,483	c 16	N71-18614* #	US-PATENT-3,535,497	c 09	N71-12539* #
US-PATENT-3,493,746	c 15	N71-15606* #	US-PATENT-3,519,484	c 06	N71-11235* #	US-PATENT-3,535,497	c 07	N71-11281* #
US-PATENT-3,493,797	c 09	N71-17652*	US-PATENT-3,520,190	c 44	N82-24644* #	US-PATENT-3,535,543	c 08	N71-24890*
US-PATENT-3,493,805	c 15	N71-12521* #	US-PATENT-3,520,238	c 44	N82-24643* #	US-PATENT-3,535,547	c 09	N71-13486* #
US-PATENT-3,493,901	c 09	N71-12517* #	US-PATENT-3,520,317	c 10	N71-13537* #	US-PATENT-3,535,560	c 09	N71-12520* #
US-PATENT-3,493,929	c 08	N71-12505* #	US-PATENT-3,520,496	c 14	N71-18465*	US-PATENT-3,535,562	c 09	N71-12516* #
US-PATENT-3,493,942	c 08	N71-12504* #	US-PATENT-3,520,503	c 12	N71-17578*	US-PATENT-3,535,586	c 08	N71-12494* #
US-PATENT-3,495,260	c 21	N71-13958* #	US-PATENT-3,520,617	c 31	N71-16345*	US-PATENT-3,535,602	c 33	N71-27862*
US-PATENT-3,495,262	c 07	N71-12396* #	US-PATENT-3,521,054	c 31	N71-16085*	US-PATENT-3,535,642	c 15	N71-24696*
US-PATENT-3,498,840	c 44	N82-24642* #	US-PATENT-3,521,143	c 23	N71-16101*	US-PATENT-3,535,644	c 25	N71-15562*
US-PATENT-3,498,841	c 44	N82-24641* #	US-PATENT-3,521,290	c 06	N71-13461* #	US-PATENT-3,535,657	c 09	N71-13522* #
US-PATENT-3,500,020	c 01	N71-13411* #	US-PATENT-3,523,228	c 08	N71-18752*	US-PATENT-3,535,658	c 08	N71-12503* #
US-PATENT-3,500,525	c 15	N71-17688*	US-PATENT-3,526,030	c 31	N71-16102*	US-PATENT-3,535,683	c 09	N71-12519* #
US-PATENT-3,500,677	c 14	N71-17584*	US-PATENT-3,526,134	c 10	N71-24861*	US-PATENT-3,535,696	c 07	N71-12390* #
US-PATENT-3,500,686	c 12	N71-17569*	US-PATENT-3,526,139	c 15	N71-17686*	US-PATENT-3,535,702	c 08	N71-12500* #
US-PATENT-3,500,688	c 14	N71-17587*	US-PATENT-3,526,140	c 33	N71-16656*	US-PATENT-3,535,709	c 31	N71-15566*
US-PATENT-3,500,747	c 09	N71-18599*	US-PATENT-3,526,359	c 33	N71-16221*	US-PATENT-3,535,710	c 08	N71-12506* #
US-PATENT-3,500,827	c 05	N71-11203* #	US-PATENT-3,526,365	c 31	N71-16223*	US-PATENT-3,535,768	c 09	N71-12515* #
US-PATENT-3,501,112	c 15	N71-17693*	US-PATENT-3,526,372	c 27	N71-16223*	US-PATENT-3,535,772	c 15	N71-19213*
US-PATENT-3,501,632	c 27	N71-16348*	US-PATENT-3,526,382	c 33	N71-16357*	US-PATENT-3,535,772	c 08	N71-12507* #
US-PATENT-3,501,641	c 20	N71-16340*	US-PATENT-3,526,460	c 28	N71-16224*	US-PATENT-3,535,803	c 08	N71-24650*
US-PATENT-3,501,648	c 10	N71-24799*	US-PATENT-3,526,470	c 31	N71-16346*	US-PATENT-3,535,805	c 05	N71-24730*
US-PATENT-3,501,649	c 10	N71-18723*	US-PATENT-3,526,611	c 15	N71-17649*	US-PATENT-3,535,842	c 26	N71-25490*
US-PATENT-3,501,664	c 14	N71-17585*	US-PATENT-3,526,617	c 23	N71-16365*	US-PATENT-3,535,842	c 09	N71-24807*
US-PATENT-3,501,683	c 15	N71-17694*	US-PATENT-3,526,660	c 18	N71-15545*	US-PATENT-3,535,842	c 05	N71-24728*
US-PATENT-3,501,684	c 09	N71-26092*	US-PATENT-3,526,660	c 18	N71-16210*	US-PATENT-3,535,842	c 15	N71-24694*
US-PATENT-3,501,701	c 08	N71-18692*	US-PATENT-3,526,674	c 06	N71-11236* #	US-PATENT-3,535,842	c 27	N78-17214* #
US-PATENT-3,501,704	c 07	N71-11282* #	US-PATENT-3,526,674	c 09	N71-13531* #	US-PATENT-3,535,842	c 09	N71-24800*
US-PATENT-3,501,712	c 09	N71-19516*	US-PATENT-3,526,674	c 09	N71-13521* #	US-PATENT-3,535,842	c 09	N71-24595*
US-PATENT-3,501,743	c 09	N71-18843*	US-PATENT-3,526,674	c 27	N78-33228* #	US-PATENT-3,535,842	c 31	N71-24813*
US-PATENT-3,501,750	c 08	N71-19288*	US-PATENT-3,526,674	c 15	N71-17692*	US-PATENT-3,535,842	c 09	N71-24804*
US-PATENT-3,501,752	c 08	N71-18595*	US-PATENT-3,526,674	c 17	N71-16393*	US-PATENT-3,535,842	c 07	N71-24625*
US-PATENT-3,501,764	c 10	N71-18722*	US-PATENT-3,526,674	c 09	N71-13518* #	US-PATENT-3,535,842	c 07	N71-24614*
US-PATENT-3,502,051	c 15	N71-17647*	US-PATENT-3,526,674	c 15	N71-18616*	US-PATENT-3,535,842	c 15	N71-24865*
US-PATENT-3,502,074	c 05	N71-11190* #	US-PATENT-3,526,674	c 14	N71-18481*	US-PATENT-3,535,842	c 15	N71-24835*
US-PATENT-3,502,141	c 33	N71-16277*	US-PATENT-3,526,674	c 15	N71-18132*	US-PATENT-3,535,842	c 33	N71-25351*
US-PATENT-3,503,251	c 32	N71-16428*	US-PATENT-3,526,674	c 33	N71-15641*	US-PATENT-3,535,842	c 15	N71-24600*
US-PATENT-3,504,258	c 10	N71-18724*	US-PATENT-3,526,674	c 12	N71-18615*	US-PATENT-3,535,842	c 16	N71-26154*
US-PATENT-3,504,983	c 23	N71-16341*	US-PATENT-3,526,674	c 15	N71-18580*	US-PATENT-3,535,842	c 23	N71-24868*
US-PATENT-3,506,496	c 44	N82-24645* #	US-PATENT-3,526,674	c 21	N71-19212*	US-PATENT-3,535,842	c 15	N71-24875*
US-PATENT-3,507,034	c 15	N71-17650*	US-PATENT-3,526,674	c 30	N71-15990*	US-PATENT-3,535,842	c 24	N71-25555*
US-PATENT-3,507,114	c 27	N71-16392*	US-PATENT-3,526,674	c 18	N71-16046*	US-PATENT-3,535,842	c 07	N71-24742*
US-PATENT-3,507,146	c 05	N71-11202* #	US-PATENT-3,526,674	c 03	N71-11049* #	US-PATENT-3,535,842	c 08	N71-24891*
US-PATENT-3,507,150	c 20	N71-16281*	US-PATENT-3,526,674	c 17	N71-16044*	US-PATENT-3,535,842	c 07	N71-24741*
US-PATENT-3,507,425	c 15	N71-17628*	US-PATENT-3,526,674	c 06	N71-11238* #	US-PATENT-3,535,842	c 09	N71-24803*
US-PATENT-3,507,436	c 08	N71-19420*	US-PATENT-3,526,674	c 07	N71-19433*	US-PATENT-3,535,842	c 09	N71-24904*
US-PATENT-3,507,704	c 03	N71-11052* #	US-PATENT-3,526,674	c 10	N71-19468*	US-PATENT-3,535,842	c 03	N71-24719*
US-PATENT-3,507,706	c 03	N71-18698*	US-PATENT-3,526,674	c 08	N71-18602*	US-PATENT-3,535,842	c 09	N71-24893*
US-PATENT-3,508,036	c 08	N71-18693*	US-PATENT-3,526,674	c 24	N71-16095*	US-PATENT-3,535,842	c 09	N71-24843*
US-PATENT-3,508,039	c 08	N71-19437*	US-PATENT-3,526,674	c 23	N71-16100*	US-PATENT-3,535,842	c 07	N71-24840*
US-PATENT-3,508,053	c 09	N71-18830*	US-PATENT-3,526,674	c 10	N71-18772*	US-PATENT-3,535,842	c 10	N71-24844*
US-PATENT-3,508,070	c 03	N71-11057* #	US-PATENT-3,526,674	c 03	N71-12255* #	US-PATENT-3,535,842	c 09	N71-24841*
US-PATENT-3,508,152	c 07	N71-11266* #	US-PATENT-3,526,674	c 15	N71-17822*	US-PATENT-3,535,842	c 16	N71-28554*
US-PATENT-3,508,156	c 07	N71-11267* #	US-PATENT-3,526,674	c 10	N71-19421*	US-PATENT-3,535,842	c 03	N71-24681*
US-PATENT-3,508,347	c 05	N71-24606*	US-PATENT-3,526,674	c 10	N71-12554* #	US-PATENT-3,535,842	c 15	N71-24836*
US-PATENT-3,508,402	c 33	N71-16104*	US-PATENT-3,526,674	c 07	N71-19773*	US-PATENT-3,535,842	c 15	N71-24984*
US-PATENT-3,508,541	c 05	N71-11193* #	US-PATENT-3,526,674	c 07	N71-24583*	US-PATENT-3,535,842	c 10	N71-24862*
US-PATENT-3,508,578	c 32	N71-16103*	US-PATENT-3,526,674	c 10	N72-28241* #	US-PATENT-3,535,842	c 09	N71-24717*
US-PATENT-3,508,723	c 31	N71-16222*	US-PATENT-3,526,674	c 08	N71-12502* #	US-PATENT-3,535,842	c 34	N78-17337* #
US-PATENT-3,508,724	c 02	N71-11037* #	US-PATENT-3,526,674	c 10	N71-19417*	US-PATENT-3,535,842	c 28	N71-25213*
US-PATENT-3,508,739	c 15	N71-17648*	US-PATENT-3,526,674	c 08	N71-18594*	US-PATENT-3,535,842	c 23	N71-24725*
US-PATENT-3,508,779	c 15	N71-24897*	US-PATENT-3,526,674	c 07	N71-19854*	US-PATENT-3,535,842	c 11	N71-24985*
US-PATENT-3,508,940	c 18	N71-16124*	US-PATENT-3,526,674	c 02	N71-19287*	US-PATENT-3,535,842	c 38	N78-28563* #
US-PATENT-3,508,955	c 18	N71-16105*	US-PATENT-3,526,674	c 07	N71-11285*	US-PATENT-3,535,842	c 09	N71-24597*



US-PATENT-3,545,725	c 15	N71-24599*	US-PATENT-3,567,913	c 10	N71-27137*	US-PATENT-3,582,960	c 09	N71-28618*
US-PATENT-3,545,792	c 15	N71-24903*	US-PATENT-3,567,927	c 14	N71-28863*	US-PATENT-3,583,058	c 15	N71-29018*
US-PATENT-3,546,386	c 07	N71-24621*	US-PATENT-3,568,010	c 09	N71-27232*	US-PATENT-3,583,239	c 15	N71-29132*
US-PATENT-3,546,471	c 14	N71-24864*	US-PATENT-3,568,028	c 10	N71-27136*	US-PATENT-3,583,322	c 05	N71-28619*
US-PATENT-3,546,552	c 15	N71-24895*	US-PATENT-3,568,103	c 10	N71-25900*	US-PATENT-3,583,419	c 12	N71-28741*
US-PATENT-3,546,553	c 09	N71-24805*	US-PATENT-3,568,197	c 07	N71-27056*	US-PATENT-3,583,744	c 15	N71-29133*
US-PATENT-3,546,684	c 07	N71-24624*	US-PATENT-3,568,447	c 15	N71-27432*	US-PATENT-3,583,777	c 15	N71-28465*
US-PATENT-3,546,694	c 10	N71-24798*	US-PATENT-3,568,572	c 15	N71-27754*	US-PATENT-3,583,815	c 15	N71-28740*
US-PATENT-3,546,705	c 09	N71-24842*	US-PATENT-3,568,702	c 10	N71-25899*	US-PATENT-3,584,311	c 09	N71-28468*
US-PATENT-3,546,917	c 15	N71-24679*	US-PATENT-3,568,748	c 15	N71-27091*	US-PATENT-3,584,660	c 15	N72-12408*
US-PATENT-3,546,920	c 06	N71-24607*	US-PATENT-3,568,795	c 15	N71-27067*	US-PATENT-3,585,514	c 10	N71-33129*
US-PATENT-3,546,931	c 32	N71-25360*	US-PATENT-3,568,805	c 15	N71-27146*	US-PATENT-3,585,882	c 15	N71-33518*
US-PATENT-3,547,105	c 09	N71-24618*	US-PATENT-3,568,874	c 15	N71-27068*	US-PATENT-3,586,261	c 31	N71-33160*
US-PATENT-3,547,376	c 31	N71-25434*	US-PATENT-3,568,885	c 14	N71-27005*	US-PATENT-3,586,815	c 11	N71-33612*
US-PATENT-3,547,540	c 16	N71-24828*	US-PATENT-3,569,710	c 14	N71-25901*	US-PATENT-3,587,306	c 16	N71-33410*
US-PATENT-3,547,801	c 03	N71-24718*	US-PATENT-3,569,744	c 09	N71-27016*	US-PATENT-3,587,424	c 23	N71-33229*
US-PATENT-3,548,107	c 07	N71-24622*	US-PATENT-3,569,804	c 18	N71-27397*	US-PATENT-3,588,331	c 07	N72-12081*
US-PATENT-3,548,633	c 18	N71-24934*	US-PATENT-3,569,827	c 14	N71-27186*	US-PATENT-3,588,359	c 07	N71-33108*
US-PATENT-3,548,636	c 15	N71-24910*	US-PATENT-3,569,828	c 10	N71-27271*	US-PATENT-3,588,483	c 08	N71-33110*
US-PATENT-3,548,812	c 05	N71-24729*	US-PATENT-3,569,866	c 07	N71-27191*	US-PATENT-3,588,648	c 07	N71-33613*
US-PATENT-3,548,930	c 33	N71-25353*	US-PATENT-3,569,875	c 10	N71-25917*	US-PATENT-3,588,671	c 09	N71-33109*
US-PATENT-3,549,435	c 14	N72-28438* #	US-PATENT-3,569,956	c 07	N71-27233*	US-PATENT-3,588,705	c 07	N71-33696*
US-PATENT-3,549,564	c 06	N71-24739*	US-PATENT-3,569,976	c 10	N71-27365*	US-PATENT-3,588,751	c 07	N71-33606*
US-PATENT-3,549,799	c 09	N71-25866*	US-PATENT-3,570,143	c 28	N71-26779*	US-PATENT-3,588,874	c 09	N71-33519*
US-PATENT-3,549,882	c 15	N71-24896*	US-PATENT-3,570,364	c 12	N71-27332*	US-PATENT-3,588,883	c 10	N71-33407*
US-PATENT-3,549,955	c 09	N71-24892*	US-PATENT-3,570,513	c 28	N71-27585*	US-PATENT-3,591,420	c 03	N71-33409*
US-PATENT-3,550,023	c 09	N71-24806*	US-PATENT-3,570,785	c 02	N71-27088*	US-PATENT-3,591,426	c 17	N71-33408*
US-PATENT-3,550,034	c 16	N71-24832*	US-PATENT-3,570,789	c 15	N71-27135*	US-PATENT-3,591,885	c 15	N72-11390*
US-PATENT-3,550,129	c 21	N71-24948*	US-PATENT-3,571,555	c 09	N71-27001*	US-PATENT-3,591,960	c 15	N72-12409*
US-PATENT-3,550,585	c 05	N71-24738*	US-PATENT-3,571,656	c 10	N71-27366*	US-PATENT-3,591,967	c 28	N72-11709*
US-PATENT-3,551,266	c 33	N71-24858*	US-PATENT-3,571,662	c 09	N71-27364*	US-PATENT-3,592,422	c 15	N72-11391*
US-PATENT-3,551,816	c 07	N71-24613*	US-PATENT-3,571,693	c 09	N71-27053*	US-PATENT-3,592,478	c 09	N72-11224*
US-PATENT-3,551,831	c 33	N75-27251* #	US-PATENT-3,571,699	c 14	N71-27325*	US-PATENT-3,592,505	c 05	N72-11085*
US-PATENT-3,552,124	c 28	N71-26642*	US-PATENT-3,571,700	c 10	N71-27338*	US-PATENT-3,592,549	c 14	N72-11364*
US-PATENT-3,552,125	c 28	N71-26173*	US-PATENT-3,571,707	c 10	N71-27272*	US-PATENT-3,592,559	c 02	N72-11018*
US-PATENT-3,553,002	c 18	N71-26100*	US-PATENT-3,571,800	c 08	N71-27255*	US-PATENT-3,592,628	c 15	N72-11387*
US-PATENT-3,553,586	c 07	N71-26292*	US-PATENT-3,571,801	c 14	N71-27185*	US-PATENT-3,592,688	c 15	N72-11389*
US-PATENT-3,553,704	c 10	N71-26142*	US-PATENT-3,572,089	c 28	N71-27094*	US-PATENT-3,592,761	c 15	N72-11392*
US-PATENT-3,553,904	c 15	N71-26134*	US-PATENT-3,572,104	c 15	N71-27006*	US-PATENT-3,593,001	c 24	N72-11595*
US-PATENT-3,554,466	c 31	N71-26537*	US-PATENT-3,572,112	c 28	N71-27095*	US-PATENT-3,593,024	c 09	N72-11225*
US-PATENT-3,554,647	c 23	N71-26206*	US-PATENT-3,572,610	c 14	N71-27215*	US-PATENT-3,593,138	c 07	N72-11149*
US-PATENT-3,554,806	c 03	N71-26084*	US-PATENT-3,572,935	c 27	N82-29451* #	US-PATENT-3,593,175	c 10	N72-11256*
US-PATENT-3,555,192	c 07	N71-26181*	US-PATENT-3,573,078	c 74	N78-33913* #	US-PATENT-3,593,180	c 07	N72-11150*
US-PATENT-3,555,361	c 10	N71-26531*	US-PATENT-3,573,470	c 33	N78-17294* #	US-PATENT-3,593,194	c 16	N72-12440*
US-PATENT-3,555,455	c 23	N71-26722*	US-PATENT-3,573,504	c 09	N71-28886*	US-PATENT-3,593,199	c 07	N72-12080*
US-PATENT-3,555,483	c 35	N77-21393* #	US-PATENT-3,573,583	c 08	N71-27057*	US-PATENT-3,594,790	c 09	N72-12136*
US-PATENT-3,555,867	c 15	N71-26148*	US-PATENT-3,573,797	c 15	N71-28582*	US-PATENT-3,594,803	c 28	N72-11708*
US-PATENT-3,555,898	c 12	N71-26546*	US-PATENT-3,573,977	c 03	N71-28579*	US-PATENT-3,596,465	c 14	N72-11363*
US-PATENT-3,556,048	c 09	N71-26701*	US-PATENT-3,573,986	c 18	N71-29040*	US-PATENT-3,596,510	c 15	N72-11385*
US-PATENT-3,556,634	c 07	N71-26291*	US-PATENT-3,573,996	c 22	N71-28759*	US-PATENT-3,596,554	c 15	N72-11386*
US-PATENT-3,557,027	c 06	N71-25929*	US-PATENT-3,574,057	c 14	N71-28933*	US-PATENT-3,596,863	c 03	N72-11062*
US-PATENT-3,557,534	c 15	N71-26185*	US-PATENT-3,574,084	c 15	N71-28467*	US-PATENT-3,597,281	c 08	N72-11171*
US-PATENT-3,559,031	c 10	N71-26085*	US-PATENT-3,574,277	c 11	N71-27036*	US-PATENT-3,598,921	c 07	N72-11148*
US-PATENT-3,559,096	c 10	N71-25882*	US-PATENT-3,574,286	c 07	N71-29065*	US-PATENT-3,599,216	c 08	N72-11172*
US-PATENT-3,559,460	c 14	N71-25882*	US-PATENT-3,574,438	c 23	N71-29123*	US-PATENT-3,599,335	c 05	N72-11084*
US-PATENT-3,559,937	c 14	N71-26672*	US-PATENT-3,574,448	c 14	N71-29041*	US-PATENT-3,599,443	c 14	N72-11365*
US-PATENT-3,560,081	c 19	N71-26627*	US-PATENT-3,574,462	c 23	N71-29125*	US-PATENT-3,599,489	c 15	N72-11388*
US-PATENT-3,560,161	c 06	N71-26754*	US-PATENT-3,574,467	c 14	N71-28993*	US-PATENT-3,600,046	c 33	N78-17296* #
US-PATENT-3,561,828	c 15	N71-26189*	US-PATENT-3,574,470	c 06	N71-27254*	US-PATENT-3,600,599	c 11	N72-17183* #
US-PATENT-3,562,575	c 09	N71-26182*	US-PATENT-3,574,770	c 15	N71-27214*	US-PATENT-3,602,920	c 05	N72-22093* #
US-PATENT-3,562,631	c 14	N71-26137*	US-PATENT-3,575,336	c 14	N71-27058*	US-PATENT-3,602,973	c 15	N72-22492* #
US-PATENT-3,562,857	c 15	N71-26721*	US-PATENT-3,575,585	c 14	N71-27090*	US-PATENT-3,602,984	c 26	N72-17820* #
US-PATENT-3,562,881	c 09	N71-26678*	US-PATENT-3,575,597	c 16	N71-27183*	US-PATENT-3,603,092	c 28	N72-17843* #
US-PATENT-3,562,919	c 15	N71-26145*	US-PATENT-3,575,602	c 09	N71-26133*	US-PATENT-3,603,093	c 28	N72-18766* #
US-PATENT-3,563,135	c 15	N71-27147*	US-PATENT-3,575,638	c 10	N71-26334*	US-PATENT-3,603,260	c 33	N72-17947* #
US-PATENT-3,563,198	c 18	N71-26285*	US-PATENT-3,575,641	c 28	N71-26781*	US-PATENT-3,603,285	c 25	N75-29192* #
US-PATENT-3,563,232	c 05	N71-27234*	US-PATENT-3,576,107	c 14	N71-26161*	US-PATENT-3,603,382	c 33	N72-17948* #
US-PATENT-3,563,307	c 15	N71-26611*	US-PATENT-3,576,127	c 15	N71-26635*	US-PATENT-3,603,383	c 15	N72-17450* #
US-PATENT-3,563,668	c 14	N71-26788*	US-PATENT-3,576,135	c 02	N71-26110*	US-PATENT-3,603,432	c 30	N72-17873* #
US-PATENT-3,563,727	c 15	N71-27184*	US-PATENT-3,576,301	c 18	N71-26772*	US-PATENT-3,603,533	c 14	N72-17326* #
US-PATENT-3,563,918	c 06	N71-27363*	US-PATENT-3,576,656	c 15	N71-29032*	US-PATENT-3,603,686	c 16	N72-13437* #
US-PATENT-3,564,234	c 09	N71-26787*	US-PATENT-3,576,669	c 09	N71-28691*	US-PATENT-3,603,688	c 14	N72-17323* #
US-PATENT-3,564,401	c 14	N71-26135*	US-PATENT-3,576,723	c 06	N71-28620*	US-PATENT-3,603,690	c 07	N72-17109* #
US-PATENT-3,564,420	c 14	N71-26774*	US-PATENT-3,576,786	c 10	N71-28860*	US-PATENT-3,603,722	c 08	N72-22166* #
US-PATENT-3,564,564	c 15	N71-26162*	US-PATENT-3,577,014	c 07	N71-28430*	US-PATENT-3,603,772	c 09	N72-17152* #
US-PATENT-3,564,866	c 23	N71-26654*	US-PATENT-3,577,092	c 06	N73-30102* #	US-PATENT-3,603,798	c 09	N72-17154* #
US-PATENT-3,564,906	c 32	N71-26681*	US-PATENT-3,577,356	c 14	N71-29134*	US-PATENT-3,603,864	c 09	N72-17155* #
US-PATENT-3,565,530	c 15	N71-26673*	US-PATENT-3,578,755	c 11	N71-28629*	US-PATENT-3,603,892	c 09	N72-17153* #
US-PATENT-3,565,584	c 15	N71-27372*	US-PATENT-3,578,756	c 14	N71-28992*	US-PATENT-3,603,946	c 14	N72-18411* #
US-PATENT-3,565,607	c 17	N71-26773*	US-PATENT-3,578,758	c 16	N71-29131*	US-PATENT-3,603,974	c 08	N72-18184* #
US-PATENT-3,565,719	c 03	N71-26726*	US-PATENT-3,578,838	c 14	N71-28994*	US-PATENT-3,603,976	c 10	N72-17172* #
US-PATENT-3,566,027	c 07	N71-27341*	US-PATENT-3,578,867	c 08	N71-29033*	US-PATENT-3,605,424	c 15	N72-17453* #
US-PATENT-3,566,045	c 08	N71-27210*	US-PATENT-3,578,957	c 09	N71-29139*	US-PATENT-3,605,482	c 14	N72-16282* #
US-PATENT-3,566,122	c 14	N71-27323*	US-PATENT-3,578,988	c 09	N71-28421*	US-PATENT-3,605,495	c 14	N72-17327* #
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US-PATENT-3,782,835	c 74	N74-15095* #	US-PATENT-3,814,083	c 52	N74-26626* #	US-PATENT-3,853,075	c 09	N75-12968* #
US-PATENT-3,782,904	c 35	N74-15127* #	US-PATENT-3,814,350	c 18	N74-27397* #	US-PATENT-3,854,097	c 75	N75-13625* #
US-PATENT-3,783,250	c 62	N74-14920* #	US-PATENT-3,814,645	c 24	N74-30001* #	US-PATENT-3,854,113	c 37	N75-13265* #
US-PATENT-3,783,354	c 33	N74-14956* #	US-PATENT-3,814,653	c 24	N74-27035* #	US-PATENT-3,855,873	c 37	N75-13266* #
US-PATENT-3,783,399	c 33	N74-14939* #	US-PATENT-3,814,678	c 25	N74-26948* #	US-PATENT-3,856,042	c 37	N75-15050* #
US-PATENT-3,783,443	c 35	N74-16135* #	US-PATENT-3,814,939	c 25	N74-26947* #	US-PATENT-3,856,402	c 36	N75-15028* #
US-PATENT-3,784,499	c 27	N74-17283* #	US-PATENT-3,815,048	c 33	N74-26732* #	US-PATENT-3,856,471	c 25	N75-14844* #
US-PATENT-3,785,836	c 27	N82-29452* #	US-PATENT-3,815,109	c 52	N74-26625* #	US-PATENT-3,856,534	c 23	N75-14834* #
US-PATENT-3,787,959	c 37	N74-18128* #	US-PATENT-3,815,205	c 33	N74-26977* #	US-PATENT-3,857,031	c 35	N75-15014* #
US-PATENT-3,788,163	c 37	N74-18127* #	US-PATENT-3,815,969	c 35	N74-26946* #	US-PATENT-3,857,045	c 33	N75-14957* #
US-PATENT-3,789,654	c 25	N74-18551* #	US-PATENT-3,816,657	c 32	N74-26654* #	US-PATENT-3,859,119	c 36	N75-15029* #
US-PATENT-3,789,920	c 34	N74-18552* #	US-PATENT-3,816,785	c 73	N74-26767* #	US-PATENT-3,859,714	c 37	N75-15992* #
US-PATENT-3,789,947	c 37	N74-18125* #	US-PATENT-3,817,082	c 34	N74-27730* #	US-PATENT-3,859,714	c 24	N79-25143* #
US-PATENT-3,790,037	c 54	N74-17853* #	US-PATENT-3,817,084	c 31	N74-27900* #	US-PATENT-3,859,736	c 09	N75-15662* #
US-PATENT-3,790,347	c 37	N74-18123* #	US-PATENT-3,817,622	c 75	N74-30156* #	US-PATENT-3,859,840	c 35	N75-15932* #
US-PATENT-3,790,409	c 44	N74-19693* #	US-PATENT-3,817,627	c 35	N74-27860* #	US-PATENT-3,859,845	c 35	N75-15931* #
US-PATENT-3,790,432	c 37	N74-18126* #	US-PATENT-3,818,325	c 44	N74-27519* #	US-PATENT-3,860,342	c 35	N75-16783* #
US-PATENT-3,790,650	c 31	N74-18124* #	US-PATENT-3,818,346	c 33	N74-27705* #	US-PATENT-3,860,393	c 25	N76-18245* #
US-PATENT-3,790,795	c 35	N74-18088* #	US-PATENT-3,818,767	c 35	N74-28097* #	US-PATENT-3,860,858	c 33	N75-15874* #
US-PATENT-3,790,906	c 33	N74-17927* #	US-PATENT-3,818,775	c 37	N74-27901* #	US-PATENT-3,860,921	c 32	N75-15854* #
US-PATENT-3,791,207	c 09	N74-17955* #	US-PATENT-3,818,814	c 31	N74-27902* #	US-PATENT-3,860,946	c 33	N79-11314* #
US-PATENT-3,792,399	c 33	N74-17928* #	US-PATENT-3,819,299	c 37	N74-27904* #	US-PATENT-3,863,881	c 37	N75-18573* #
US-PATENT-3,793,109	c 31	N74-18089* #	US-PATENT-3,819,419	c 34	N74-27861* #	US-PATENT-3,864,060	c 35	N75-19611* #
US-PATENT-3,795,134	c 09	N74-19528* #	US-PATENT-3,819,440	c 32	N74-27612* #	US-PATENT-3,864,239	c 37	N75-19684* #
US-PATENT-3,795,448	c 72	N74-19310* #	US-PATENT-3,819,550	c 27	N74-27037* #	US-PATENT-3,864,542	c 37	N75-19683* #
US-PATENT-3,795,840	c 33	N74-17929* #	US-PATENT-3,820,095	c 33	N74-27862* #	US-PATENT-3,864,797	c 20	N75-18310* #
US-PATENT-3,795,858	c 35	N74-18090* #	US-PATENT-3,820,286	c 37	N74-27905* #	US-PATENT-3,864,953	c 35	N75-19615* #
US-PATENT-3,795,862	c 33	N74-17930* #	US-PATENT-3,820,388	c 35	N74-27865* #	US-PATENT-3,864,960	c 35	N75-19612* #
US-PATENT-3,795,900	c 35	N74-17885* #	US-PATENT-3,820,529	c 52	N74-27864* #	US-PATENT-3,865,442	c 37	N75-18574* #
US-PATENT-3,795,910	c 44	N74-19870* #	US-PATENT-3,820,630	c 07	N74-27490* #	US-PATENT-3,865,975	c 36	N75-19652* #
US-PATENT-3,796,473	c 37	N74-20063* #	US-PATENT-3,820,741	c 37	N74-27903* #	US-PATENT-3,866,022	c 33	N75-19519* #
US-PATENT-3,796,592	c 24	N74-19769* #	US-PATENT-3,820,918	c 07	N74-28226* #	US-PATENT-3,866,114	c 33	N75-18477* #
US-PATENT-3,797,098	c 37	N74-21057* #	US-PATENT-3,821,102	c 34	N74-27744* #	US-PATENT-3,866,128	c 33	N75-19517* #
US-PATENT-3,797,919	c 70	N74-21300* #	US-PATENT-3,821,462	c 33	N74-27683* #	US-PATENT-3,866,210	c 33	N75-19516* #
US-PATENT-3,798,741	c 31	N74-21059* #	US-PATENT-3,821,546	c 33	N74-27682* #	US-PATENT-3,866,233	c 33	N75-19522* #
US-PATENT-3,798,748	c 37	N74-21055* #	US-PATENT-3,821,556	c 74	N74-27866* #	US-PATENT-3,866,663	c 18	N75-19329* #
US-PATENT-3,798,778	c 19	N74-21015* #	US-PATENT-3,824,707	c 09	N74-30597* #	US-PATENT-3,867,677	c 33	N75-19524* #
US-PATENT-3,798,896	c 37	N74-21060* #	US-PATENT-3,825,760	c 19	N74-29410* #	US-PATENT-3,868,591	c 36	N75-19655* #
US-PATENT-3,799,149	c 52	N74-20728* #	US-PATENT-3,826,448	c 08	N74-30421* #	US-PATENT-3,868,830	c 77	N75-20139* #
US-PATENT-3,799,475	c 02	N74-20646* #	US-PATENT-3,826,726	c 25	N74-30502* #	US-PATENT-3,868,856	c 35	N75-19614* #
US-PATENT-3,799,793	c 74	N74-20008* #	US-PATENT-3,826,729	c 20	N74-31269* #	US-PATENT-3,869,151	c 37	N75-19686* #
US-PATENT-3,799,813	c 76	N74-20329* #	US-PATENT-3,826,964	c 33	N74-29556* #	US-PATENT-3,869,160	c 37	N75-19685* #
US-PATENT-3,800,074	c 36	N74-20009* #	US-PATENT-3,827,288	c 71	N74-31148* #	US-PATENT-3,869,210	c 36	N75-19653* #
US-PATENT-3,800,082	c 71	N74-21014* #	US-PATENT-3,827,807	c 89	N74-30886* #	US-PATENT-3,869,212	c 35	N75-19613* #
US-PATENT-3,800,224	c 32	N74-19790* #	US-PATENT-3,828,137	c 32	N74-30524* #	US-PATENT-3,869,597	c 77	N75-20140* #
US-PATENT-3,800,227	c 32	N74-20809* #	US-PATENT-3,828,138	c 32	N74-30523* #	US-PATENT-3,869,615	c 35	N75-19616* #
US-PATENT-3,800,237	c 32	N74-19788* #	US-PATENT-3,828,524	c 34	N74-30608* #	US-PATENT-3,869,624	c 33	N75-18479* #
US-PATENT-3,800,253	c 37	N74-21056* #	US-PATENT-3,829,237	c 07	N74-31270* #	US-PATENT-3,869,659	c 33	N75-19522* #
US-PATENT-3,801,617	c 37	N74-21058* #	US-PATENT-3,829,839	c 60	N76-18800* #	US-PATENT-3,869,667	c 33	N75-19521* #
US-PATENT-3,802,249	c 35	N74-21019* #	US-PATENT-3,830,060	c 44	N74-33379* #	US-PATENT-3,869,676	c 33	N75-19520* #
US-PATENT-3,802,253	c 52	N74-20726* #	US-PATENT-3,830,094	c 35	N74-32879* #	US-PATENT-3,869,680	c 36	N75-19654* #
US-PATENT-3,802,262	c 35	N74-21018* #	US-PATENT-3,830,335	c 07	N74-32418* #	US-PATENT-3,869,779	c 26	N75-19408* #
US-PATENT-3,802,660	c 37	N74-21065* #	US-PATENT-3,830,431	c 07	N74-33218* #	US-PATENT-3,872,395	c 33	N75-19518* #
US-PATENT-3,802,753	c 37	N74-21064* #	US-PATENT-3,830,552	c 37	N74-32921* #	US-PATENT-3,874,240	c 35	N75-25122* #
US-PATENT-3,802,779	c 74	N74-21304* #	US-PATENT-3,830,609	c 31	N74-32920* #	US-PATENT-3,874,635	c 37	N75-25185* #
US-PATENT-3,803,090	c 27	N74-21156* #	US-PATENT-3,830,673	c 28	N74-33209* #	US-PATENT-3,874,677	c 37	N75-21631* #
US-PATENT-3,803,393	c 60	N74-20836* #	US-PATENT-3,831,098	c 33	N74-32711* #	US-PATENT-3,875,332	c 32	N75-21486* #
US-PATENT-3,803,445	c 32	N74-20813* #	US-PATENT-3,831,117	c 33	N74-32712* #	US-PATENT-3,875,394	c 33	N75-26243* #
US-PATENT-3,803,617	c 32	N74-20863* #	US-PATENT-3,831,142	c 32	N74-32598* #	US-PATENT-3,875,404	c 35	N75-23910* #
US-PATENT-3,804,472	c 37	N74-21061* #	US-PATENT-3,832,290	c 20	N74-329			



US-PATENT-3,877,833	c 37	N75-25186* #	US-PATENT-3,915,482	c 37	N76-14460* #	US-PATENT-3,953,734	c 25	N76-22323* #
US-PATENT-3,878,464	c 32	N75-24981* #	US-PATENT-3,915,572	c 36	N76-14447* #	US-PATENT-3,953,792	c 35	N76-22509* #
US-PATENT-3,881,132	c 33	N77-21315* #	US-PATENT-3,916,060	c 27	N76-15310* #	US-PATENT-3,955,034	c 27	N76-23426* #
US-PATENT-3,882,417	c 36	N78-17366* #	US-PATENT-3,916,084	c 33	N76-14371* #	US-PATENT-3,955,941	c 44	N76-29700* #
US-PATENT-3,882,530	c 76	N75-25730* #	US-PATENT-3,916,187	c 35	N76-15431* #	US-PATENT-3,956,032	c 76	N76-25049* #
US-PATENT-3,882,634	c 51	N75-25503* #	US-PATENT-3,916,316	c 32	N76-14321* #	US-PATENT-3,956,050	c 37	N76-24575* #
US-PATENT-3,882,719	c 14	N75-24794* #	US-PATENT-3,916,380	c 60	N76-14818* #	US-PATENT-3,956,233	c 27	N76-24405* #
US-PATENT-3,882,732	c 12	N75-24774* #	US-PATENT-3,916,714	c 74	N76-14931* #	US-PATENT-3,956,833	c 09	N76-24280* #
US-PATENT-3,882,846	c 05	N75-24716* #	US-PATENT-3,916,710	c 33	N76-14372* #	US-PATENT-3,956,819	c 35	N76-24523* #
US-PATENT-3,883,095	c 07	N75-24736* #	US-PATENT-3,920,339	c 27	N76-14264* #	US-PATENT-3,956,832	c 35	N76-24524* #
US-PATENT-3,883,215	c 35	N75-25124* #	US-PATENT-3,920,413	c 44	N76-14595* #	US-PATENT-3,957,030	c 44	N76-23675* #
US-PATENT-3,883,436	c 74	N75-25706* #	US-PATENT-3,920,416	c 44	N76-18642* #	US-PATENT-3,957,037	c 35	N76-24525* #
US-PATENT-3,883,689	c 35	N75-25123* #	US-PATENT-3,922,930	c 37	N76-15457* #	US-PATENT-3,957,044	c 54	N76-24900* #
US-PATENT-3,883,785	c 09	N75-24758* #	US-PATENT-3,923,166	c 37	N76-15460* #	US-PATENT-3,957,104	c 37	N76-23570* #
US-PATENT-3,883,812	c 33	N75-25041* #	US-PATENT-3,924,068	c 32	N76-16249* #	US-PATENT-3,957,675	c 24	N76-24363* #
US-PATENT-3,883,817	c 33	N75-25040* #	US-PATENT-3,924,137	c 72	N76-15860* #	US-PATENT-3,958,188	c 36	N76-24553* #
US-PATENT-3,883,872	c 32	N75-24982* #	US-PATENT-3,924,164	c 33	N76-15373* #	US-PATENT-3,958,238	c 60	N76-23850* #
US-PATENT-3,884,432	c 05	N75-25914* #	US-PATENT-3,924,176	c 35	N76-16390* #	US-PATENT-3,958,553	c 44	N76-24696* #
US-PATENT-3,884,765	c 35	N75-27330* #	US-PATENT-3,924,183	c 33	N76-16331* #	US-PATENT-3,961,997	c 34	N76-28635* #
US-PATENT-3,887,233	c 05	N75-25915* #	US-PATENT-3,924,200	c 35	N76-15436* #	US-PATENT-3,964,305	c 44	N76-27517* #
US-PATENT-3,887,345	c 35	N75-26334* #	US-PATENT-3,924,237	c 32	N76-15330* #	US-PATENT-3,964,319	c 07	N76-27232* #
US-PATENT-3,887,365	c 37	N75-26371* #	US-PATENT-3,924,239	c 35	N76-15435* #	US-PATENT-3,964,812	c 37	N76-27567* #
US-PATENT-3,888,362	c 54	N75-27758* #	US-PATENT-3,924,267	c 35	N76-16391* #	US-PATENT-3,964,903	c 34	N76-27515* #
US-PATENT-3,888,410	c 34	N75-26282* #	US-PATENT-3,924,444	c 35	N76-15432* #	US-PATENT-3,964,928	c 44	N76-27684* #
US-PATENT-3,888,561	c 35	N75-27328* #	US-PATENT-3,925,104	c 35	N76-15434* #	US-PATENT-3,965,096	c 27	N76-32315* #
US-PATENT-3,888,705	c 25	N75-26043* #	US-PATENT-3,925,312	c 23	N76-15268* #	US-PATENT-3,965,354	c 33	N76-27473* #
US-PATENT-3,889,064	c 32	N75-26195* #	US-PATENT-3,926,482	c 37	N76-15461* #	US-PATENT-3,965,475	c 33	N76-27472* #
US-PATENT-3,889,122	c 37	N75-26372* #	US-PATENT-3,926,567	c 27	N76-15311* #	US-PATENT-3,966,499	c 44	N76-31666* #
US-PATENT-3,889,155	c 33	N75-26244* #	US-PATENT-3,927,227	c 12	N76-15189* #	US-PATENT-3,966,547	c 44	N76-27383* #
US-PATENT-3,889,182	c 33	N75-26245* #	US-PATENT-3,927,324	c 35	N76-15433* #	US-PATENT-3,967,091	c 25	N76-27568* #
US-PATENT-3,889,185	c 33	N75-26246* #	US-PATENT-3,927,408	c 32	N76-15329* #	US-PATENT-3,971,230	c 37	N76-29590* #
US-PATENT-3,889,264	c 32	N75-26194* #	US-PATENT-3,928,708	c 27	N76-16230* #	US-PATENT-3,971,256	c 91	N76-30131* #
US-PATENT-3,889,311	c 54	N75-27759* #	US-PATENT-3,928,119	c 75	N76-17951* #	US-PATENT-3,971,362	c 52	N76-29894* #
US-PATENT-3,891,452	c 27	N75-27160* #	US-PATENT-3,928,305	c 34	N76-17317* #	US-PATENT-3,971,363	c 52	N76-29895* #
US-PATENT-3,891,533	c 33	N75-27252* #	US-PATENT-3,929,306	c 18	N76-17185* #	US-PATENT-3,971,364	c 52	N76-29896* #
US-PATENT-3,891,848	c 45	N75-27585* #	US-PATENT-3,929,364	c 35	N76-16392* #	US-PATENT-3,971,535	c 05	N76-29217* #
US-PATENT-3,891,851	c 35	N75-27331* #	US-PATENT-3,930,628	c 02	N76-16014* #	US-PATENT-3,971,602	c 37	N76-29588* #
US-PATENT-3,893,449	c 54	N75-27760* #	US-PATENT-3,930,735	c 66	N76-19888* #	US-PATENT-3,971,697	c 25	N76-29379* #
US-PATENT-3,893,458	c 54	N75-27761* #	US-PATENT-3,931,132	c 27	N76-16228* #	US-PATENT-3,971,703	c 51	N76-29891* #
US-PATENT-3,893,573	c 18	N75-27041* #	US-PATENT-3,931,447	c 27	N76-16229* #	US-PATENT-3,971,847	c 44	N76-29704* #
US-PATENT-3,894,289	c 36	N75-27364* #	US-PATENT-3,931,456	c 33	N76-16332* #	US-PATENT-3,971,915	c 35	N76-29552* #
US-PATENT-3,894,677	c 24	N75-28135* #	US-PATENT-3,931,462	c 45	N76-17656* #	US-PATENT-3,971,930	c 74	N76-30053* #
US-PATENT-3,894,887	c 44	N76-18641* #	US-PATENT-3,931,516	c 35	N76-16393* #	US-PATENT-3,971,940	c 35	N76-29551* #
US-PATENT-3,895,521	c 35	N75-29381* #	US-PATENT-3,931,532	c 44	N76-16612* #	US-PATENT-3,972,008	c 36	N76-29575* #
US-PATENT-3,895,912	c 35	N75-29380* #	US-PATENT-3,932,262	c 25	N79-10163* #	US-PATENT-3,972,038	c 17	N76-29347* #
US-PATENT-3,896,758	c 35	N75-33367* #	US-PATENT-3,936,827	c 37	N76-19437* #	US-PATENT-3,972,651	c 44	N76-29701* #
US-PATENT-3,896,758	c 37	N77-22480* #	US-PATENT-3,937,055	c 37	N76-18454* #	US-PATENT-3,972,727	c 44	N76-29699* #
US-PATENT-3,896,955	c 35	N75-30428* #	US-PATENT-3,937,212	c 33	N76-19338* #	US-PATENT-3,976,997	c 62	N76-31946* #
US-PATENT-3,898,730	c 24	N75-30260* #	US-PATENT-3,937,215	c 52	N76-19785* #	US-PATENT-3,977,147	c 39	N76-31562* #
US-PATENT-3,898,882	c 35	N75-30503* #	US-PATENT-3,937,387	c 37	N76-18455* #	US-PATENT-3,977,197	c 44	N76-31667* #
US-PATENT-3,899,224	c 37	N75-30562* #	US-PATENT-3,937,533	c 37	N76-18459* #	US-PATENT-3,977,231	c 35	N76-31489* #
US-PATENT-3,899,252	c 35	N75-30502* #	US-PATENT-3,937,555	c 35	N76-18402* #	US-PATENT-3,977,771	c 74	N76-31998* #
US-PATENT-3,899,517	c 23	N75-30256* #	US-PATENT-3,937,681	c 37	N76-18456* #	US-PATENT-3,977,787	c 35	N76-31940* #
US-PATENT-3,899,680	c 73	N75-30876* #	US-PATENT-3,937,845	c 74	N76-18913* #	US-PATENT-3,977,831	c 45	N76-31714* #
US-PATENT-3,899,696	c 36	N75-30524* #	US-PATENT-3,938,035	c 33	N76-19339* #	US-PATENT-3,978,187	c 37	N76-31524* #
US-PATENT-3,899,745	c 33	N75-30429* #	US-PATENT-3,938,037	c 26	N76-18257* #	US-PATENT-3,978,287	c 32	N76-31372* #
US-PATENT-3,900,705	c 33	N75-30431* #	US-PATENT-3,938,162	c 32	N76-18295* #	US-PATENT-3,978,360	c 33	N76-31409* #
US-PATENT-3,900,741	c 35	N75-30504* #	US-PATENT-3,938,182	c 33	N76-18353* #	US-PATENT-3,978,364	c 31	N76-31365* #
US-PATENT-3,900,847	c 03	N75-30132* #	US-PATENT-3,938,188	c 33	N76-18345* #	US-PATENT-3,978,410	c 03	N76-32140* #
US-PATENT-3,902,143	c 33	N75-30430* #	US-PATENT-3,938,367	c 35	N76-18401* #	US-PATENT-3,978,417	c 36	N76-31512* #
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US-PATENT-4,032,089	c 24	N77-28225* #	US-PATENT-4,062,225	c 27	N78-14164* #	US-PATENT-4,092,466	c 27	N78-32256* #
US-PATENT-4,032,089	c 27	N81-14077* #	US-PATENT-4,062,247	c 27	N78-15276* #	US-PATENT-4,092,466	c 27	N80-10358* #
US-PATENT-4,033,119	c 07	N77-28118* #	US-PATENT-4,062,347	c 44	N78-14625* #	US-PATENT-4,092,606	c 33	N78-32338* #
US-PATENT-4,033,133	c 28	N80-10374* #	US-PATENT-4,062,650	c 32	N78-15323* #	US-PATENT-4,092,617	c 33	N78-32340* #
US-PATENT-4,033,182	c 39	N77-28511* #	US-PATENT-4,062,996	c 39	N78-15512* #	US-PATENT-4,092,633	c 54	N78-32720* #
US-PATENT-4,033,286	c 25	N78-28253* #	US-PATENT-4,063,088	c 37	N78-16369* #	US-PATENT-4,092,648	c 32	N78-31321* #
US-PATENT-4,033,316	c 33	N77-28385* #	US-PATENT-4,063,088	c 44	N78-15560* #	US-PATENT-4,092,712	c 33	N78-32341* #
US-PATENT-4,033,334	c 52	N77-28717* #	US-PATENT-4,063,092	c 25	N78-15210* #	US-PATENT-4,092,874	c 37	N78-31426* #
US-PATENT-4,033,349	c 52	N77-28716* #	US-PATENT-4,063,282	c 74	N78-15879* #	US-PATENT-4,093,156	c 05	N78-32086* #
US-PATENT-4,033,479	c 37	N77-28487* #	US-PATENT-4,063,814	c 74	N78-15880* #	US-PATENT-4,093,354	c 73	N78-32848* #
US-PATENT-4,033,503	c 26	N77-29260* #	US-PATENT-4,063,981	c 35	N78-15461* #	US-PATENT-4,093,		



US-PATENT-4,094,073	c 35	N78-32395* #	US-PATENT-4,131,486	c 44	N79-14528* #	US-PATENT-4,162,701	c 34	N79-31523* #
US-PATENT-4,094,758	c 26	N78-32229* #	US-PATENT-4,132,068	c 07	N79-14097* #	US-PATENT-4,162,928	c 44	N79-31753* #
US-PATENT-4,094,775	c 52	N80-14687* #	US-PATENT-4,132,069	c 07	N79-14096* #	US-PATENT-4,163,678	c 44	N79-31752* #
US-PATENT-4,094,862	c 27	N78-32261* #	US-PATENT-4,132,130	c 44	N79-14527* #	US-PATENT-4,164,079	c 09	N79-31228* #
US-PATENT-4,094,943	c 27	N78-32262* #	US-PATENT-4,132,375	c 08	N79-14108* #	US-PATENT-4,164,718	c 32	N80-14281* #
US-PATENT-4,095,593	c 54	N78-32721* #	US-PATENT-4,132,594	c 52	N79-14749* #	US-PATENT-4,165,460	c 43	N79-31706* #
US-PATENT-4,096,315	c 74	N78-32854* #	US-PATENT-4,132,599	c 52	N79-14750* #	US-PATENT-4,166,170	c 27	N79-33316* #
US-PATENT-4,097,194	c 07	N78-33101* #	US-PATENT-4,132,829	c 27	N79-14214* #	US-PATENT-4,166,959	c 27	N81-14078* #
US-PATENT-4,098,142	c 37	N79-10422* #	US-PATENT-4,132,940	c 35	N79-14348* #	US-PATENT-4,168,718	c 74	N79-34011* #
US-PATENT-4,099,799	c 37	N79-10418* #	US-PATENT-4,132,989	c 32	N79-14268* #	US-PATENT-4,168,939	c 46	N80-10709* #
US-PATENT-4,100,331	c 37	N79-10418* #	US-PATENT-4,133,697	c 44	N79-17314* #	US-PATENT-4,169,129	c 27	N80-10358* #
US-PATENT-4,100,331	c 44	N79-10513* #	US-PATENT-4,133,697	c 44	N80-14474* #	US-PATENT-4,170,776	c 39	N80-10507* #
US-PATENT-4,100,487	c 33	N79-10337* #	US-PATENT-4,133,941	c 44	N79-17313* #	US-PATENT-4,170,987	c 54	N80-10799* #
US-PATENT-4,100,531	c 32	N79-10263* #	US-PATENT-4,133,941	c 25	N82-21268* #	US-PATENT-4,171,615	c 20	N80-10278* #
US-PATENT-4,101,195	c 89	N79-10969* #	US-PATENT-4,134,447	c 31	N79-17029* #	US-PATENT-4,172,228	c 05	N80-14107* #
US-PATENT-4,101,644	c 25	N79-10162* #	US-PATENT-4,134,683	c 43	N79-17288* #	US-PATENT-4,172,786	c 37	N80-10494* #
US-PATENT-4,101,780	c 35	N79-10389* #	US-PATENT-4,134,744	c 35	N79-17192* #	US-PATENT-4,172,883	c 46	N80-14603* #
US-PATENT-4,101,891	c 35	N79-10391* #	US-PATENT-4,135,019	c 85	N79-17747* #	US-PATENT-4,173,001	c 52	N81-27783* #
US-PATENT-4,101,961	c 52	N79-10724* #	US-PATENT-4,135,127	c 24	N79-16915* #	US-PATENT-4,173,324	c 20	N80-14188* #
US-PATENT-4,102,580	c 74	N79-11865* #	US-PATENT-4,135,290	c 33	N79-17133* #	US-PATENT-4,173,397	c 35	N80-14371* #
US-PATENT-4,103,550	c 31	N79-11246* #	US-PATENT-4,135,367	c 44	N79-18444* #	US-PATENT-4,173,820	c 33	N80-14332* #
US-PATENT-4,103,619	c 28	N79-11231* #	US-PATENT-4,135,817	c 44	N79-18443* #	US-PATENT-4,173,820	c 45	N80-14579* #
US-PATENT-4,103,712	c 37	N79-11402* #	US-PATENT-4,135,851	c 35	N79-18296* #	US-PATENT-4,173,820	c 26	N80-14229* #
US-PATENT-4,104,018	c 25	N79-11151* #	US-PATENT-4,135,851	c 37	N79-18318* #	US-PATENT-4,173,820	c 36	N80-14384* #
US-PATENT-4,104,084	c 44	N79-11467* #	US-PATENT-4,135,851	c 37	N80-26658* #	US-PATENT-4,173,820	c 37	N80-14398* #
US-PATENT-4,104,091	c 44	N79-11468* #	US-PATENT-4,136,211	c 24	N79-17916* #	US-PATENT-4,173,820	c 44	N80-14473* #
US-PATENT-4,104,134	c 44	N79-11469* #	US-PATENT-4,137,010	c 05	N79-17847* #	US-PATENT-4,173,820	c 44	N80-14474* #
US-PATENT-4,104,134	c 44	N80-16452* #	US-PATENT-4,137,365	c 27	N79-18052* #	US-PATENT-4,175,249	c 51	N80-16714* #
US-PATENT-4,104,873	c 37	N79-11403* #	US-PATENT-4,139,291	c 74	N79-20856* #	US-PATENT-4,176,360	c 18	N80-14183* #
US-PATENT-4,105,261	c 37	N79-11404* #	US-PATENT-4,139,806	c 71	N79-20827* #	US-PATENT-4,176,662	c 52	N80-16725* #
US-PATENT-4,105,517	c 44	N79-11470* #	US-PATENT-4,139,839	c 60	N79-20751* #	US-PATENT-4,176,950	c 36	N80-16321* #
US-PATENT-4,105,966	c 33	N79-11315* #	US-PATENT-4,139,862	c 32	N79-20297* #	US-PATENT-4,177,325	c 44	N80-16452* #
US-PATENT-4,106,218	c 74	N79-13855* #	US-PATENT-4,140,972	c 32	N79-20296* #	US-PATENT-4,177,333	c 25	N80-16116* #
US-PATENT-4,106,587	c 71	N79-14871* #	US-PATENT-4,141,219	c 34	N79-20335* #	US-PATENT-4,178,100	c 35	N80-18359* #
US-PATENT-4,106,687	c 37	N79-13364* #	US-PATENT-4,141,224	c 34	N79-20336* #	US-PATENT-4,180,648	c 27	N80-16158* #
US-PATENT-4,107,363	c 33	N79-12331* #	US-PATENT-4,141,259	c 37	N79-20377* #	US-PATENT-4,181,589	c 51	N80-16715* #
US-PATENT-4,107,627	c 72	N79-13826* #	US-PATENT-4,142,101	c 74	N79-20857* #	US-PATENT-4,182,158	c 35	N80-18358* #
US-PATENT-4,107,919	c 34	N79-13288* #	US-PATENT-4,142,119	c 33	N79-20314* #	US-PATENT-4,183,217	c 20	N80-18097* #
US-PATENT-4,108,241	c 34	N79-13289* #	US-PATENT-4,143,314	c 20	N79-20179* #	US-PATENT-4,184,072	c 44	N80-18552* #
US-PATENT-4,109,213	c 33	N79-22373* #	US-PATENT-4,145,058	c 37	N79-22475* #	US-PATENT-4,184,111	c 44	N80-18551* #
US-PATENT-4,109,644	c 52	N79-18580* #	US-PATENT-4,145,255	c 25	N79-22235* #	US-PATENT-4,184,149	c 06	N80-18036* #
US-PATENT-4,110,683	c 33	N79-18193* #	US-PATENT-4,145,524	c 27	N79-22300* #	US-PATENT-4,184,155	c 43	N80-18498* #
US-PATENT-4,110,703	c 36	N79-18307* #	US-PATENT-4,145,933	c 39	N79-22537* #	US-PATENT-4,184,327	c 07	N80-18039* #
US-PATENT-4,111,041	c 35	N79-14345* #	US-PATENT-4,146,180	c 37	N79-22474* #	US-PATENT-4,184,368	c 48	N80-18667* #
US-PATENT-4,111,058	c 35	N79-14347* #	US-PATENT-4,146,367	c 25	N81-33246* #	US-PATENT-4,184,472	c 76	N80-18951* #
US-PATENT-4,111,068	c 37	N79-14382* #	US-PATENT-4,146,409	c 26	N79-22271* #	US-PATENT-4,184,491	c 52	N80-18690* #
US-PATENT-4,111,184	c 44	N79-14526* #	US-PATENT-4,148,031	c 32	N79-24210* #	US-PATENT-4,184,609	c 37	N80-18393* #
US-PATENT-4,111,718	c 35	N79-14346* #	US-PATENT-4,148,295	c 44	N79-23481* #	US-PATENT-4,184,903	c 44	N80-18550* #
US-PATENT-4,111,729	c 28	N79-14228* #	US-PATENT-4,148,375	c 46	N79-22679* #	US-PATENT-4,185,164	c 33	N80-18286* #
US-PATENT-4,111,775	c 76	N79-14906* #	US-PATENT-4,148,452	c 08	N79-23097* #	US-PATENT-4,185,493	c 35	N80-18357* #
US-PATENT-4,111,851	c 24	N79-14156* #	US-PATENT-4,148,962	c 24	N79-24062* #	US-PATENT-4,186,347	c 32	N80-18253* #
US-PATENT-4,112,357	c 33	N79-14305* #	US-PATENT-4,149,034	c 71	N79-23753* #	US-PATENT-4,186,749	c 52	N80-18691* #
US-PATENT-4,112,497	c 32	N79-14267* #	US-PATENT-4,149,233	c 33	N79-24257* #	US-PATENT-4,187,394	c 32	N80-18252* #
US-PATENT-4,112,875	c 44	N78-33526* #	US-PATENT-4,149,278	c 54	N79-24652* #	US-PATENT-4,187,416	c 33	N80-18285* #
US-PATENT-4,116,131	c 20	N78-32179* #	US-PATENT-4,149,423	c 32	N79-24203* #	US-PATENT-4,187,470	c 36	N80-18372* #
US-PATENT-4,117,669	c 07	N79-10057* #	US-PATENT-4,149,521	c 44	N79-24433* #	US-PATENT-4,187,506	c 33	N80-18287* #
US-PATENT-4,117,731	c 35	N79-10390* #	US-PATENT-4,149,665	c 44	N79-24431* #	US-PATENT-4,188,368	c 31	N80-18231* #
US-PATENT-4,117,749	c 37	N79-10419* #	US-PATENT-4,149,817	c 44	N79-24432* #	US-PATENT-4,188,823	c 02	N80-20224* #
US-PATENT-4,117,881	c 51	N79-10694* #	US-PATENT-4,149,938	c 25	N79-24073* #	US-PATENT-4,189,234	c 74	N80-21138* #
US-PATENT-4,118,014	c 37	N79-10420* #	US-PATENT-4,150,425	c 33	N79-24254* #	US-PATENT-4,189,675	c 32	N80-20448* #
US-PATENT-4,118,315	c 51	N79-10693* #	US-PATENT-4,151,086	c 34	N79-24285* #	US-PATENT-4,189,914	c 07	N81-29129* #
US-PATENT-4,118,427	c 27	N80-32514* #	US-PATENT-4,151,456	c 33	N79-23345* #	US-PATENT-4,190,060	c 52	N81-29763* #
US-PATENT-4,118,620	c 37	N79-10421* #	US-PATENT-4,151,612	c 54	N79-24651* #	US-PATENT-4,190,626	c 24	N81-29163* #
US-PATENT-4,118,665	c 33	N79-10338* #	US-PATENT-4,151,800	c 24	N79-25142* #	US-PATENT-4,191,159	c 37	N80-219703* #
US-PATENT-4,118,666	c 32	N79-10262* #	US-PATENT-4,152,194	c 76	N79-23798* #	US-PATENT-4,191,505	c 44	N80-21828* #
US-PATENT-4,118,671	c 33	N79-10339* #	US-PATENT-4,153,134	c 46	N79-23555* #	US-PATENT-4,191,893	c 44	N80-29834* #
US-PATENT-4,118,701	c 32	N79-10264* #	US-PATENT-4,153,476	c 44	N79-25482* #	US-PATENT-4,192,290	c 44	N80-20810* #
US-PATENT-4,119,581	c 27	N81-14076* #	US-PATENT-4,153,818	c 32	N79-23310* #	US-PATENT-4,192,910	c 33	N80-20487* #
US-PATENT-4,119,926	c 33	N79-11313* #	US-PATENT-4,154,084	c 43	N79-25443* #	US-PATENT-4,192,910	c 44	N81-29524* #
US-PATENT-4,119,964	c 32	N79-11265* #	US-PATENT-4,154,228	c 52	N79-27836* #	US-PATENT-4,192,994	c 74	N80-21140* #
US-PATENT-4,119,972	c 32	N79-11264* #	US-PATENT-4,154,256	c 52	N79-26771* #	US-PATENT-4,193,388	c 44	N80-20808* #
US-PATENT-4,119,996	c 33	N79-12321* #	US-PATENT-4,154,501	c 05	N79-24976* #	US-PATENT-4,193,435	c 37	N80-23653* #
US-PATENT-4,121,965	c 76	N79-11920* #	US-PATENT-4,154,912	c 33	N81-29342* #	US-PATENT-4,193,570	c 35	N80-21719* #
US-PATENT-4,121,995	c 25	N79-11152* #	US-PATENT-4,155,475	c 44	N79-25481* #	US-PATENT-4,193,693	c 35	N80-20563* #
US-PATENT-4,122,214	c 44	N79-11472* #	US-PATENT-4,155,309	c 24	N79-25143* #	US-PATENT-4,193,827	c 28	N81-20402* #
US-PATENT-4,122,334	c 74	N79-12890* #	US-PATENT-4,156,309	c 44	N79-26475* #	US-PATENT-4,193,827	c 28	N81-14103* #
US-PATENT-4,122,383	c 44	N79-12541* #	US-PATENT-4,156,548	c 35	N79-26372* #	US-PATENT-4,194,115	c 25	N80-20334* #
US-PATENT-4,122,454	c 32	N79-13214* #	US-PATENT-4,156,752	c 15	N79-26100* #	US-PATENT-4,195,244	c 35	N80-20559* #
US-PATENT-4,122,518	c 52	N79-12694* #	US-PATENT-4,157,655	c 43	N79-26439* #	US-PATENT-4,195,279	c 35	N80-20560* #
US-PATENT-4,122,712	c 34	N79-12359* #	US-PATENT-4,157,718	c 43	N80-14423* #	US-PATENT-4,195,512	c 43	N80-23711* #
US-PATENT-4,122,725	c 38	N79-14398* #	US-PATENT-4,158,583	c 52	N80-14684* #	US-PATENT-4,195,666	c 37	N80-23654* #
US-PATENT-4,122,816	c 37	N79-11405* #	US-PATENT-4,158,775	c 28	N79-28342* #	US-PATENT-4,196,129	c 27	N80-32515* #
US-PATENT-4,122,833	c 44	N79-11471* #	US-PATENT-4,158,895	c 12	N79-26075* #	US-PATENT-4,196,619	c 46	N80-24906* #
US-PATENT-4,122,991	c 18	N79-11108* #	US-PATENT-4,158,995	c 72	N80-14877* #	US-PATENT-4,196,840	c 37	N80-23655* #
US-PATENT-4,123,355	c 45	N79-12584* #	US-PATENT-4,159,262	c 52	N79-26772* #	US-PATENT-4,197,530	c 33	N80-23559* #
US-PATENT-4,124,180	c 05	N79-12061* #	US-PATENT-4,159,366	c 27	N79-28307* #	US-PATENT-4,198,209	c 28	N80-23471* #
US-PATENT-4,124,330	c 07	N79-14095* #	US-PATENT-4,159,634	c 44	N79-26474* #	US-PATENT-4,198,232	c 26	N80-23419* #
US-PATENT-4,124,732	c 27	N79-12221* #	US-PATENT-4,160,254	c 37	N79-28550* #	US-PATENT-4,198,788	c 74	N80-24149* #
US-PATENT-4,128,814	c 36	N79-14362* #	US-PATENT-4,160,508	c 33	N79-28416* #	US-PATENT-4,198,792	c 25	N80-23383* #
US-PATENT-4,129,357	c 74	N79-14891* #	US-PATENT-4,160,601	c 37	N79-28551* #	US-PATENT-4,199,448	c 52	N80-23969* #
US-PATENT-4,130,032	c 37	N79-14383* #	US-PATENT-4,161,661	c 35	N79-28527* #	US-PATENT-4,199,650	c 27	N80-23452* #
US-PATENT-4,130,112	c 52	N79-14751* #	US-PATENT-4,161,731	c 33	N79-28415* #	US-PATENT-4,199,764	c 27	N80-24437* #
US-PATENT-4,130,471	c 25	N79-14169* #	US-PATENT-4,161,749	c 31	N79-28370* #	US-PATENT-4,199,937	c 32	N80-23524* #



US-PATENT-4,200,721	c 27	N80-24438* #	US-PATENT-4,244,853	c 27	N81-19296* #	US-PATENT-4,282,525	c 46	N82-12685* #
US-PATENT-4,201,468	c 32	N80-24510* #	US-PATENT-4,244,857	c 27	N81-17260* #	US-PATENT-4,282,752	c 44	N82-16474* #
US-PATENT-4,203,723	c 27	N80-26446* #	US-PATENT-4,245,085	c 27	N81-17262* #	US-PATENT-4,283,705	c 06	N82-16075* #
US-PATENT-4,204,037	c 51	N80-27067* #	US-PATENT-4,245,286	c 33	N81-19392* #	US-PATENT-4,283,995	c 37	N81-32510* #
US-PATENT-4,204,154	c 33	N80-26599* #	US-PATENT-4,245,288	c 33	N81-19393* #	US-PATENT-4,284,034	c 51	N81-32829* #
US-PATENT-4,204,402	c 07	N80-26298* #	US-PATENT-4,245,469	c 44	N81-24519* #	US-PATENT-4,284,461	c 27	N82-11206* #
US-PATENT-4,204,544	c 52	N80-27072* #	US-PATENT-4,245,768	c 37	N81-19455* #	US-PATENT-4,284,682	c 27	N82-16238* #
US-PATENT-4,204,899	c 24	N80-26388* #	US-PATENT-4,245,956	c 05	N81-19087* #	US-PATENT-4,286,209	c 35	N82-11431* #
US-PATENT-4,205,229	c 35	N80-26635* #	US-PATENT-4,246,001	c 27	N81-17261* #	US-PATENT-4,286,460	c 09	N82-11088* #
US-PATENT-4,206,383	c 72	N80-27163* #	US-PATENT-4,246,901	c 52	N81-24711* #	US-PATENT-4,286,542	c 37	N82-12441* #
US-PATENT-4,206,713	c 31	N81-15154* #	US-PATENT-4,247,434	c 25	N81-19242* #	US-PATENT-4,287,152	c 35	N82-11432* #
US-PATENT-4,206,970	c 74	N80-27185* #	US-PATENT-4,248,083	c 35	N81-19426* #	US-PATENT-4,287,518	c 32	N82-11336* #
US-PATENT-4,207,024	c 37	N80-26658* #	US-PATENT-4,249,116	c 33	N81-20352* #	US-PATENT-4,287,578	c 32	N82-18443* #
US-PATENT-4,207,024	c 37	N82-19540* #	US-PATENT-4,249,238	c 07	N81-19115* #	US-PATENT-4,287,606	c 74	N82-19029* #
US-PATENT-4,209,393	c 45	N82-11634* #	US-PATENT-4,249,417	c 52	N81-20703* #	US-PATENT-4,287,838	c 25	N82-11144* #
US-PATENT-4,209,561	c 24	N81-13999* #	US-PATENT-4,249,957	c 54	N81-19558* #	US-PATENT-4,288,585	c 27	N82-18389* #
US-PATENT-4,210,278	c 31	N80-32583* #	US-PATENT-4,250,143	c 44	N81-24724* #	US-PATENT-4,288,982	c 20	N82-18314* #
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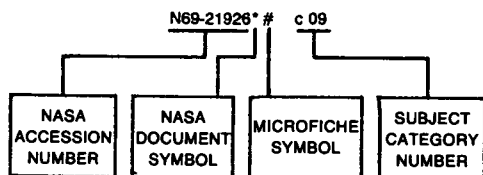


# ACCESSION NUMBER INDEX

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